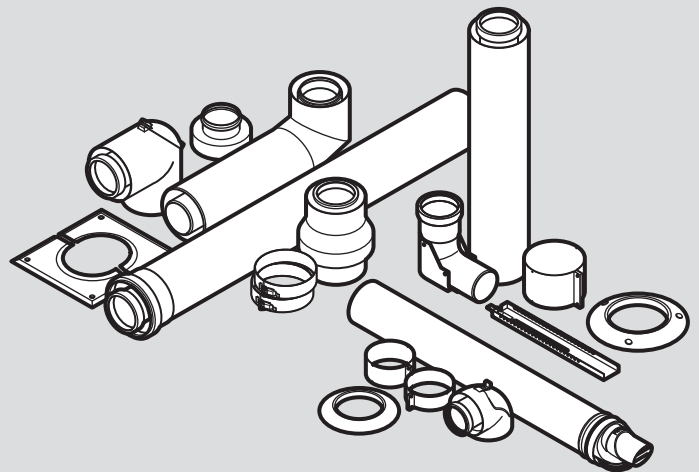


ENERGY, ULTIMATE, EASICOM, ESSENTIAL, BETACOM, MICRACOM, COMPACT



Air/flue pipe installation manual

Contents

1	Safety	3
1.1	Action-related warnings	3
1.2	Intended use	3
1.3	General safety information	3
1.4	CE certification.....	5
1.5	Regulations (directives, laws, standards)	5
2	Notes on the documentation	6
2.1	Observing other applicable documents	6
2.2	Storing documents.....	6
2.3	Validity of the instructions	6
3	Certified air/flue systems and components	7
3.1	System overview, 60/100 mm diameter	7
3.2	System overview, 80/125 mm diameter	8
4	System conditions	8
4.1	Route of the air/flue pipe in buildings	8
4.2	Location of the terminal	8
4.3	Disposing of condensate	8
4.4	Maximum pipe lengths.....	9
5	Set-up	10
5.1	Air/flue systems, 60/100 mm diameter	10
5.2	Air/flue systems, 80/125 mm diameter	31
5.3	Installing the sliding sleeve, elbows and extensions.....	35
Index		44

1 Safety

1.1 Action-related warnings

Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning symbols and signal words:

Warning symbols and signal words

**Danger!**

Imminent danger to life or risk of severe personal injury

**Danger!**

Risk of death from electric shock

**Warning.**

Risk of minor personal injury

**Caution.**

Risk of material or environmental damage

1.2 Intended use

The air/flue pipes described here are constructed using state-of-the-art technology in accordance with the recognised safety rules and regulations. Nevertheless, there is still a risk of injury or death to the system's end user or others or of damage to the products and other property in the event of improper use or use for which the products are not intended.

The air/flue pipes mentioned in these instructions must only be used in conjunction with the product types mentioned in these instructions.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use.

Intended use includes the following:

- observance of accompanying operating, installation and maintenance instructions for all system components
- installing and setting up the product in accordance with the product and system approval
- compliance with all inspection and maintenance conditions listed in the instructions.

1.3 General safety information

1.3.1 Risk caused by inadequate qualifications

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

- Set-up
 - Dismantling
 - Installation
 - Start-up
 - Inspection and maintenance
 - Repair
 - Decommissioning
- ▶ Proceed in accordance with current technology.

1.3.2 Risk of poisoning due to escaping flue gas

Improperly installed flue pipework may cause flue gas to escape.

- ▶ Before starting up the product, check that the whole air/flue pipe is securely fastened and check it for tightness.

The flue pipework may become damaged by unforeseeable external influences.

- ▶ As part of the annual maintenance, inspect the flue system in terms of:
 - external faults such as brittleness and damage
 - safe pipe connections and secure fastenings

1.3.3 Risk of death from escaping flue gas

- ▶ Ensure that all inspection and test openings in the air/flue pipe that are within the building and can be opened are always closed for start-up and during operation.

Flue gas may escape from leaking pipes or damaged seals. Mineral-oil-based greases can damage the seals.

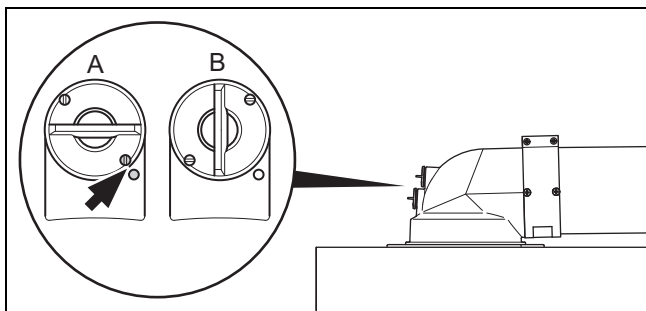
- ▶ Do not install any damaged pipes.
- ▶ Deburr and chamfer the ends of the pipes before installing them, and dispose of the shavings.
- ▶ Never use mineral-oil-based grease for the installation.
- ▶ To facilitate installation, use only water or commercially available soft soap. If a

lubricant is supplied with the product, use this lubricant.

Mortar residues, shavings, etc., in the flue gas route may prevent the flue gas from flowing outdoors as intended, and this flue gas may escape into the dwelling instead.

- ▶ After installation, remove all mortar residues, shavings, etc., from the air/flue pipe.

1.3.4 Risk of death from escaping flue gas



A Closed

B Open

Flue gas may escape through measurement openings that are incomplete or not sealed.

- ▶ Ensure that the test openings are completely sealed during operation.

1.3.5 Risk of death from leaks in the flue gas route

Extensions that are not fixed to the wall or ceiling may become disengaged due to sagging or thermal expansion.

- ▶ Ensure that every extension is fixed to the wall or ceiling by means of a pipe clamp. The distance between two pipe clamps must not be greater than the length of the extension, and must not exceed 2 m.
- ▶ For changes of direction just upstream of the elbow, install another pipe clamp.

Condensate that collects inside the flue in certain areas can damage the flue pipework seals.

- ▶ Install the horizontal flue pipe to the product with a downward gradient.
 - Downward gradient to the product: 3°



Note

3° corresponds to a downward gradient of approx. 50 mm per metre of pipe length.

1.3.6 Risk of fire and damage to electronics caused by lightning

- ▶ If the building is equipped with a lightning protection system, incorporate the air/flue pipe into the lightning protection.
- ▶ If the flue pipework (parts of the air/flue pipe situated outside the building) contains metal materials, incorporate it into the potential equalisation system.

1.3.7 Risk of injury from ice formation

Where air/flue pipes penetrate the roof, the water vapour contained in flue gas may precipitate as ice on the roof or the roof structures.

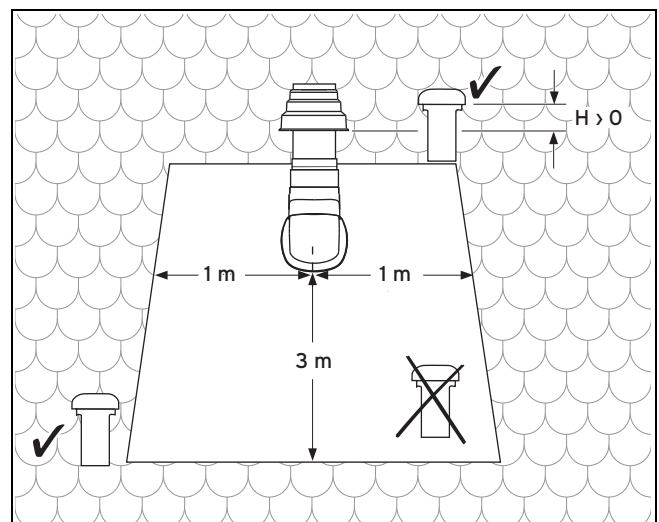
- ▶ Ensure that this ice formation does not slide from the roof.

1.3.8 Risk of damage to the structure of the building due to moisture

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.

1.3.9 Product damage caused by adjacent channel vents



Extremely damp extract air escapes from the channel vents. This may condense in the air pipe and cause damage to the product.

- ▶ Observe the requirements for minimum clearances in accordance with the figure.



1.3.10 Requirements for the air/flue terminal

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the requirements for the air/flue terminal in the boiler's installation instructions.

1.4 CE certification

The heat generators are certified as gas-fired boilers with associated flue systems in accordance with the Gas Appliances Regulation (EU) 2016/426. This set-up instructions are a component of the certification and are cited in the type testing certificate. In compliance with the regulatory statutes of these set-up instructions, the proof of usability of the elements identified by Glow-worm article numbers that are designed for the air/flue pipe is provided. If you do not use certified elements for the Glow-worm air/flue pipe when installing the heat generators, this voids the CE conformity of the heat generator. We therefore strongly recommend that you install Glow-worm air/flue systems.

1.5 Regulations (directives, laws, standards)

- ▶ Observe the national regulations, standards, directives, ordinances and laws.



2 Notes on the documentation

2.1 Observing other applicable documents

- ▶ You must always observe the installation instructions for the installed heat generator.

2.2 Storing documents

- ▶ Pass these instructions and all other applicable documents on to the end user.

2.3 Validity of the instructions

These instructions apply only for the heat generators named in the other applicable documents, hereinafter referred to as the "product".

3 Certified air/flue systems and components

3.1 System overview, 60/100 mm diameter

	Article number	Air/flue systems, concentric
A	0020219523 ^{1), 3)} 0010031041 ¹⁾	Horizontal wall/roof duct, 0.7 m
B	0020219524 ^{1), 3)}	Horizontal telescopic wall/roof duct (only available in black)
C	0020219526 ¹⁾	Direct, rear-side, telescopic flue system
D	0020230604 ²⁾	Vertical roof duct
E	0010035513 ²⁾	Horizontal wall duct, 0.7 m for multi-storey buildings
F	0010024719 ²⁾	Horizontal wall duct, for balcony installation and for installing the variable terminal set (VTK) in multi-storey buildings

1) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is not permitted.
2) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is permitted.
3) Only for boilers with an upper cover plate with more than eight fastening holes.

3.1.1 Components

The following table lists the air/flue systems that are permitted as part of the system certification, along with their certified components.

	Article number	A	B	C	D	E	F
Connector (including air pipe clamp)	0020257015				X	X	
Connector (including air pipe clamp)	0010031029				X		
Extension, 0.5 m (including air pipe clamp)	0020257007	X	X		X	X	X
Extension, 1.0 m (including air pipe clamp)	0020257008	X	X		X	X	X
Extension (stainless steel), 1.0 m (including air pipe clamp) ¹⁾	0010035515	X				X	
Extension, 2.0 m (including air pipe clamp)	0020257445	X	X		X	X	X
87° elbow, (including air pipe clamp)	0020257009	X	X		X	X	X
45° elbow (2 pcs), (including air pipe clamp)	0020257010	X	X		X	X	X
Sliding sleeve	0020267684				X		
Telescopic extension with air pipe clamp	0020267683				X		
Pipe clamps (5 pcs), DN100	0020267923	X	X		X	X	X
Fixing brackets (5 pcs), adjustable, 100 mm diameter	0020267924	X	X		X	X	X
Flat roof penetration collar	0020199443				X		
Pitched roof tile	0020258676				X		
Black terminal set for horizontal air/flue pipe	0020219538	X	X				
Variable terminal set (VTK), black	0020219529	X	X	X			X
Variable terminal set (VTK), black	0020219531	X	X	X			
Variable terminal set (VTK), white	0020219532	X	X				
Extension for variable terminal set (VTK), 1.0 m, black	0020219541	X	X	X			X
Extension for variable terminal set (VTK), 1.0 m, white	0020219542	X	X				
Deflector set, DN 60, PP, black	0020219535	X	X	X			
Deflector set, DN 60, PP, white	0020219536	X	X				
45° elbow for variable terminal set (VTK), black (2 pcs)	0020219553	X	X	X			X
45° elbow for variable terminal set (VTK), white (2 pcs)	0020219554	X	X				
87° elbow for variable terminal set (VTK), black	0020219545	X	X	X			X
87° elbow for variable terminal set (VTK), white	0020219550	X	X				

1) In accordance with the construction regulation, installation on the external wall in buildings higher than 18 m (11 m in Scotland) is permitted. The sleeve end of the extension must protrude at least 60 mm from the wall to comply with fire-protection requirements.

3.2 System overview, 80/125 mm diameter

	Article number	Air/flue systems, concentric
A	0020257018	Horizontal wall/roof duct
B	0020257016	Vertical roof duct

3.2.1 Components

The following table lists the air/flue systems that are permitted as part of the system certification, along with their certified components.

	Article number	A	B
Connector (including air pipe clamp)	0020276091	X	X
Extension, 0.5 m (including air pipe clamp)	0020257019	X	X
Extension, 1.0 m (including air pipe clamp)	0020257020	X	X
Extension, 2.0 m (including air pipe clamp)	0020257021	X	X
87° elbow (including air pipe clamp)	0020257023	X	X
45° elbow (including air pipe clamp), 2 x	0020257024	X	X
Sliding sleeve	0020257022	X	X
Pipe clamp (5 x), 125 mm diameter,	0020199418	X	X
Flat roof penetration collar	0020199443		X
Pitched roof tile	0020258676		X

4 System conditions

4.1 Route of the air/flue pipe in buildings

The air/flue pipe should be as short as possible and run as straight as possible.

- ▶ Do not arrange several elbows or inspection elements immediately after each other.

As a result of standards relating to the hygiene of potable water, potable water lines must be protected against impermissible heating.

- ▶ Lay the air/flue pipe separately from the potable water lines.

It must be possible to check and, if required, clean the entire length of the flue gas route.

It should be possible to remove the air/flue pipe again with a minimal amount of effort (preferably no time-consuming mortising work in the living area, but screwed-in casing instead). If they are arranged in shafts, they are usually easy to remove.

4.2 Location of the terminal

The location of the flue system terminal must comply with the relevant applicable international, national and/or local regulations.

- ▶ Align the terminal of the flue system in such a way that ensures a secure outward flow and distribution of the flue gases and prevents these gases from re-entering the building through openings (windows, supply air openings and balconies).
- ▶ Observe the existing regulations with regard to the clearances to windows and ventilation openings.

4.3 Disposing of condensate

Local regulations may stipulate the minimum quality of any condensate that may enter the public waste-water system. If required, a condensate neutraliser must be used.

- ▶ When disposing of the condensate into the public waste-water system, observe the local regulations.
- ▶ Only use corrosion-resistant piping material for removing condensate discharge.

4.4 Maximum pipe lengths

4.4.1 Maximum pipe lengths, 60/100 mm diameter

Air/flue system	Article number	ULTIMATE ESSENTIAL EASICOM BETACOM MICRACOM COMPACT	ENERGY
		Max. concentric pipe length	
Horizontal wall/roof duct	0020219523 0010031041 0020219524 0020219526 0010035513 0010024719	9 m plus 1 x 87° elbow	10 m plus 1 x 87° elbow
		The inclusion of additional elbows in the flue system reduces the pipe length as follows: – By 0.5 m for each 45° elbow – By 1.0 m for each 87° elbow	
Variable terminal set	0020219531 0020219532 (not with 0010035513)	The maximum concentric pipe length that is specified above is reduced as follows: – By 0.5 m with the variable terminal – By 0.5 m with each metre of VTK pipe – By 0.5 m with each 87° elbow – By 0.5 m for every two 45° elbows	
Vertical roof duct	0020230604	10 m	11 m
		The inclusion of additional elbows in the flue system reduces the pipe length as follows: – By 0.5 m for each 45° elbow – By 1.0 m for each 87° elbow	

4.4.2 Maximum pipe lengths, 80/125 mm diameter

Air/flue system	Article number	ULTIMATE ESSENTIAL EASICOM BETACOM MICRACOM COMPACT	ENERGY
		Max. concentric pipe length	
Horizontal wall/roof duct	0020257018	25 m plus 3 x 87° elbows	
Vertical roof duct	0020257016	25 m plus 3 x 87° elbows	
The inclusion of additional elbows in the flue system reduces the pipe length as follows: – By 1.0 m for each 45° elbow – By 2.5 m for each 87° elbow			

5 Set-up

5.1 Air/flue systems, 60/100 mm diameter

5.1.1 Installing horizontal wall/roof ducts

5.1.1.1 Preparing the installation



Danger!

Risk of poisoning due to escaping flue gas.

If you select an unsuitable installation site for the air/flue pipe, flue gas may be allowed to enter the building.

- ▶ Observe the existing regulations with regard to the clearances to windows and ventilation openings.



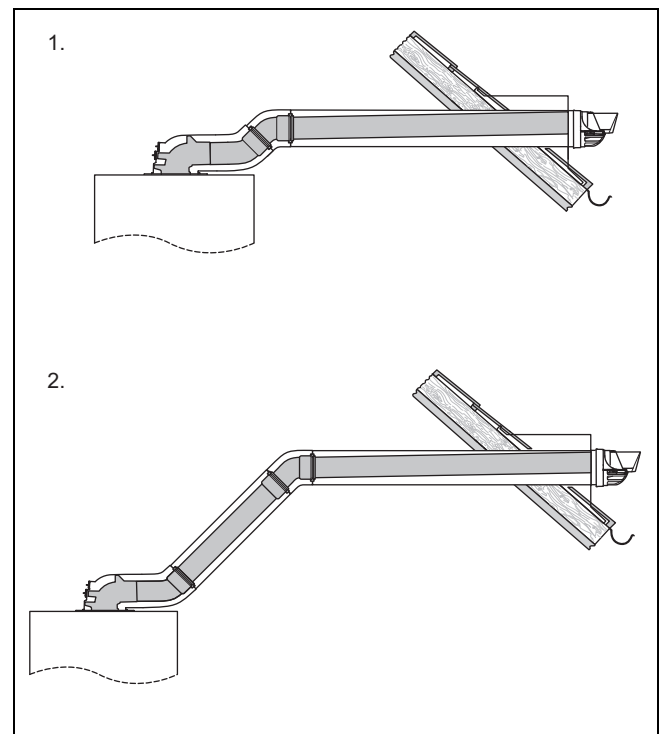
Danger!

Risk of poisoning due to escaping flue gas.

Condensate that collects inside the flue in certain areas can damage the flue pipework seals.

- ▶ Lay the horizontal flue pipe with a downward gradient of 3° to the product; 3° corresponds to a downward gradient of approx. 50 mm per metre of pipe length.
 - ▶ In doing so, note that the air/flue pipe must be centred in the wall hole.
-
- ▶ Determine the installation site for the air/flue pipe.
 - ▶ When installing the product near a light source, point out to the end user that they must clean the terminal regularly. Otherwise, due to the insects that the light may attract, the terminal may become dirty.

Installation example Horizontal roof duct

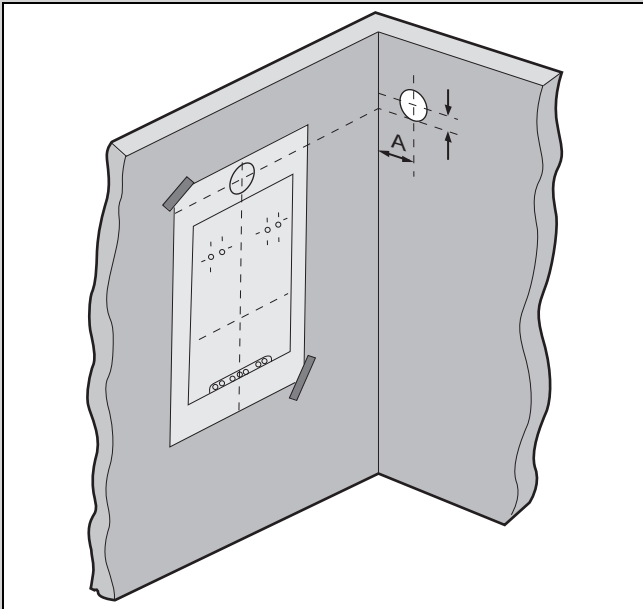


1 Direct installation 2 Offset installation

- Minimum dimensions for the dormer: Height x width: 300 mm x 300 mm
- ▶ Determine the installation site for the boiler (→ Installation instructions for the boiler).
- ▶ Ensure that all clearances required for installation and maintenance are available and that the air/flue system can be installed in accordance with these instructions.
- ▶ Secure the mounting template that is supplied with the boiler to the wall.
- ▶ Use a plumb-bob or spirit level to check whether the central line of the mounting template is vertical.

The mounting template indicates the position for horizontal installation of the air/flue pipe when connecting it to the upper side of the boiler.

Condition: Top connection, air/flue pipe to the side

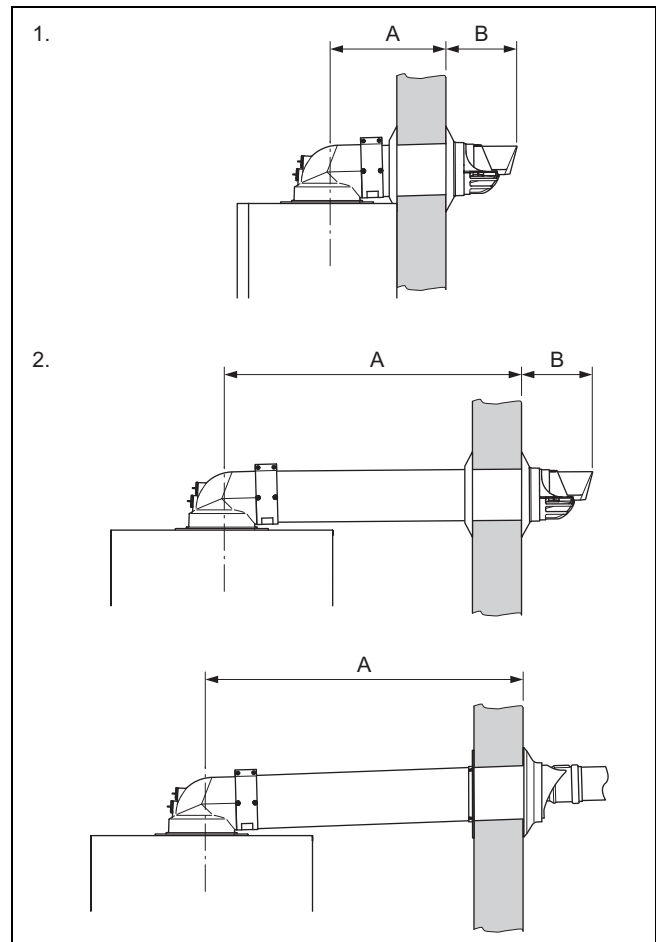


A = 125 mm

If you want to install the air/flue pipe laterally, you can determine the position of the wall duct by carefully offsetting the central line of the wall duct that is marked on the mounting template.

- Calculate the required gradient in accordance with the length of the flue pipework and then mark the position for the wall duct.

5.1.1.2 Determining the clearance to the external wall



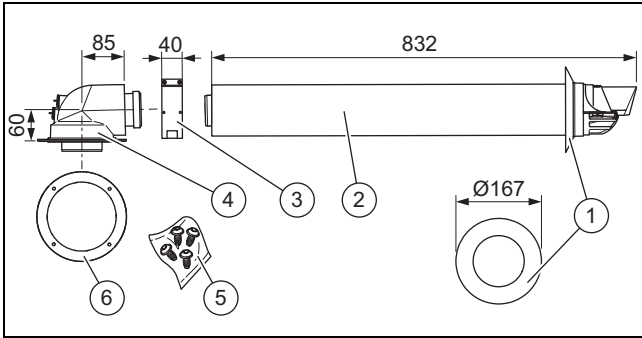
1. Upper flue pipe at the rear A Clearance to the external wall
2. Upper flue pipe to the side

- Measure the clearance (**A**) from outside of the wall to the centre of the connector.

Clearance	Article number	
	0010035513	0020219523 0010031041
B	87 mm	140 mm

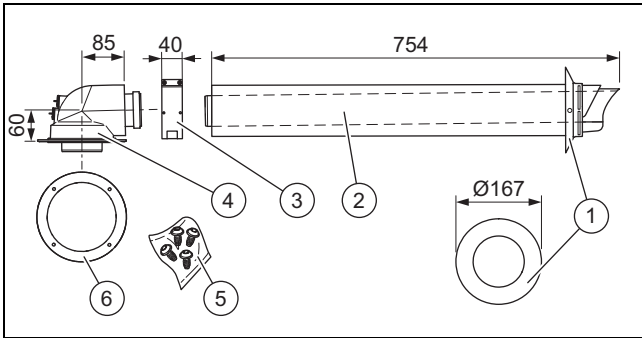
5.1.2 Installing the 60/100 mm diameter horizontal wall/roof duct, article number 0020219523 or 0010035513

5.1.2.1 Scope of delivery, article number 0020219523



- | | | | |
|---|-----------------------------------|---|--------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 4 | 87° elbow |
| 2 | Horizontal wall/roof duct | 5 | Screws (8 x) |
| 3 | 40 mm clamp | 6 | Seal |

5.1.2.2 Scope of delivery, article number 0010035513



- | | | | |
|---|-----------------------------------|---|--------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 4 | 87° elbow |
| 2 | Horizontal wall/roof duct | 5 | Screws (8 x) |
| 3 | 40 mm clamp | 6 | Seal |

5.1.2.3 Shortening the air/flue pipe

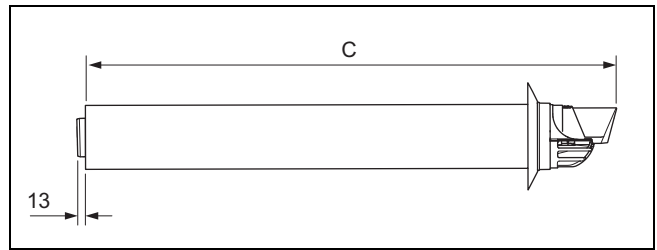


Danger!
Risk of poisoning due to escaping flue gas.

Flue gas can escape if a flue gas pipe is damaged.

- ▶ Take care that the flue gas pipe is not damaged when shortening.

- Determine the clearance to the external wall. (→ Page 11)



- Shorten the flue pipe and the air pipe by the same amount when they are assembled.

Length	Article number	
	0010035513	0020219523 0010031041
C	Clearance to external wall A + 2 mm	Clearance to external wall A + 55 mm



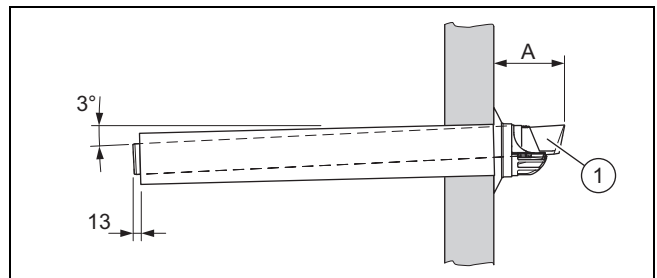
Note

Disassembling the flue pipe and the air pipe damages the latching lugs in the terminal.

Condition: Additional extensions and elbows required

- ▶ Install the extensions. (→ Page 35)
 - All of the sleeves for the flue pipe must point towards the terminal.
- ▶ Install the elbows (→ Page 38).

5.1.2.4 Installing the wall duct



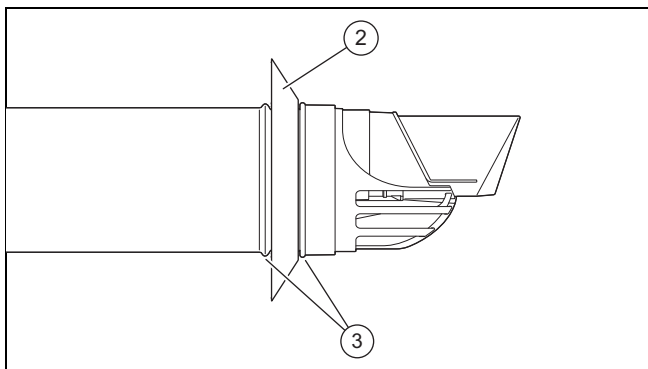
- Drill a hole.
 - Diameter: 125 mm

Clearance	Article number	
	0010035513	0020219523 0010031041
A	87 mm	140 mm



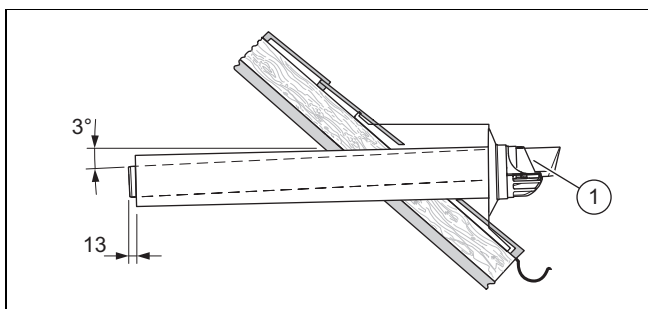
Note

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall duct with the wall collar from outside.



2. Position the flexible external collar (2) between the two seams (3).
3. Slide the air/flue pipe (1) with the flexible external collar through the wall.
4. Pull the air/flue pipe back until the external collar lies fully on the external wall.
5. Secure the air/flue pipe with mortar and leave the mortar to harden.
6. Install the wall collar on the inside of the wall.
7. Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve. (→ Page 14)

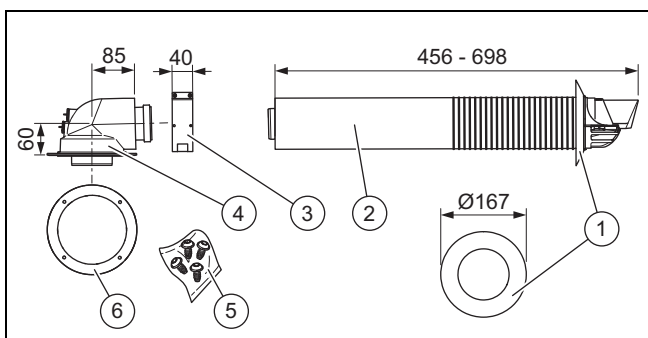
5.1.2.5 Installing the roof duct



- ▶ Insert the air/flue pipe (1) without the external collar into the dormer.

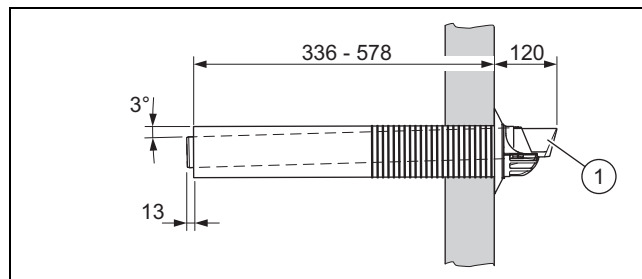
5.1.3 Installing the 60/100 mm diameter horizontal telescopic wall/roof duct, article number 0020219524

5.1.3.1 Scope of delivery



- | | | | |
|---|-----------------------------------|---|--------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 4 | 87° elbow |
| 2 | Horizontal telescopic wall duct | 5 | Screws (7 x) |
| 3 | 40 mm clamp | 6 | Seal |

5.1.3.2 Installing the wall duct

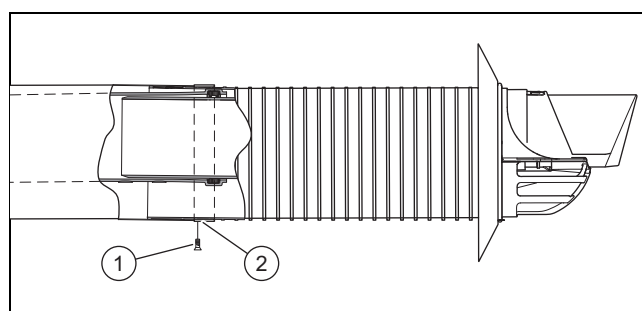


1. Drill a hole.
 - Diameter: 125 mm



Note

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall duct with the wall collar from outside.



2. Set the telescopic wall duct to the correct length.
 - Note that the TOP symbol must point upwards on both ends.
 - Do not shorten the telescopic flue pipe.



Danger!

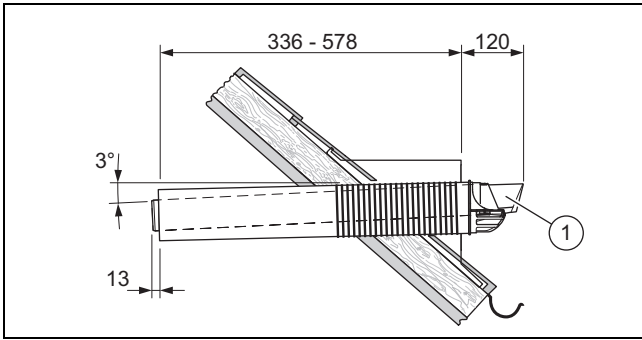
Risk of poisoning due to escaping flue gas.

Flue gas can escape if a flue gas pipe is damaged.

- ▶ Use only one of the enclosed small self-tapping screws.

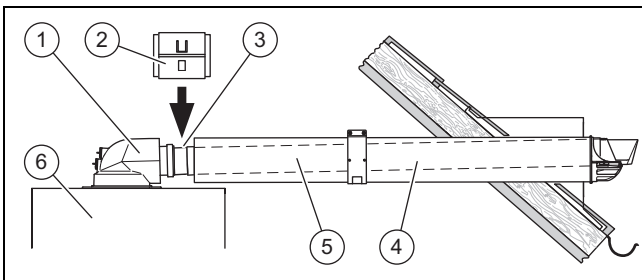
3. Secure the air pipes to each other by screwing the overlapping air pipes together using the supplied self-tapping screws on the underside (1).
4. Seal the gap in the telescopic air pipe using the supplied adhesive tape (2).
5. Slide the air/flue pipe (1) with the flexible external collar through the wall.
6. Pull the air/flue pipe back until the external collar lies fully on the external wall.
7. Secure the air/flue pipe with mortar and leave the mortar to harden.
8. Install the wall collar on the inside of the wall.
9. Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve. (→ Page 14)

5.1.3.3 Installing the roof duct



- ▶ Insert the air/flue pipe (1) without the external collar into the dormer.

5.1.4 Connecting the product



1. Install the product (6) – see the installation instructions for the product.
2. Install the 87° elbow (1) on the product using the four screws and the seal.
3. Fit the sliding sleeve (3) with the sleeve as far as it will go onto the wall/roof duct (4) or the extension (5).
4. If required, install the extensions .
5. Connect the sliding sleeve to the 87° elbow.
6. Install the air pipe clamp (2) for the sliding sleeve.

7. Alternatives 1:

Condition: Wall/roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 35)

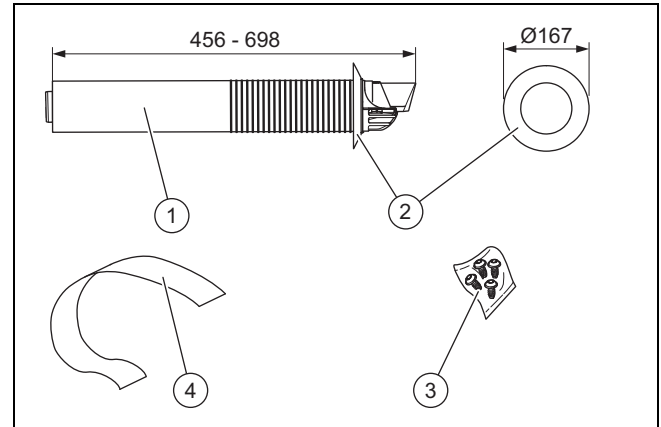
7. Alternatives 2:

Condition: Wall/roof duct with extension

- ▶ Install the extensions. (→ Page 35)
- ▶ Install the elbows (→ Page 38).
- ▶ Install the sliding sleeve. (→ Page 35)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 43)

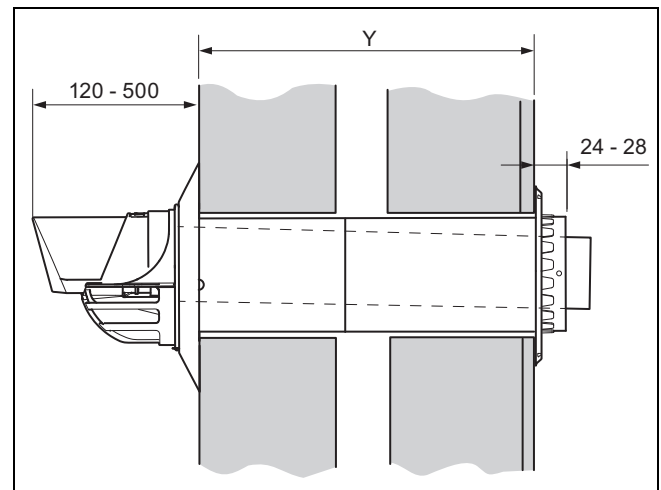
5.1.5 Installing the direct, rear, telescopic wall duct – article number 0020219526

5.1.5.1 Scope of delivery



- | | | | |
|---|----------------------|---|-----------------------|
| 1 | Telescopic wall duct | 3 | Safety screws (4 pcs) |
| 2 | Wall collar | 4 | Sealing tape |

5.1.5.2 Determining the pipe length and the location of the wall duct



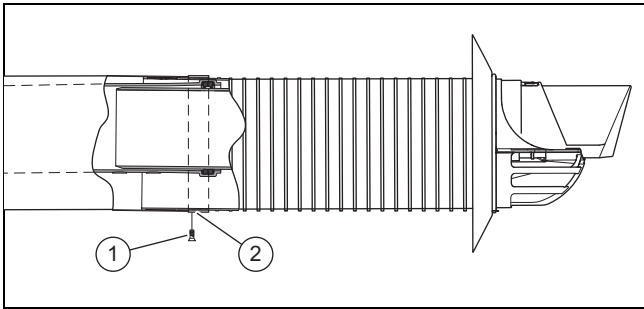
1. Determine the pipe length (→ Installation instructions for the boiler) and define the location of the wall duct.
2. Measure the clearance Y from the external wall to the installation surface for the boiler.
3. Set the required pipe length:
 - At least: $Y + 24 \text{ mm}$
 - Maximum: $Y + 28 \text{ mm}$
 - If you install the wall collar, add 12 mm to the total pipe length.
 - If the terminal is below a roof overhang or a horizontal surface, you can pull the wall duct up to 500 mm out of the wall in order to guarantee that the flue gases are extracted without any obstructions.



Note

Do not shorten the telescopic flue pipe. If the required pipe length cannot be achieved, use extensions or the horizontal wall/roof duct.

5.1.5.3 Securing the telescopic pipe



1. Set the telescopic wall duct to the correct length.
 - Note that the **TOP** symbols at both ends must point upwards.



Danger!

Risk of poisoning due to escaping flue gas.

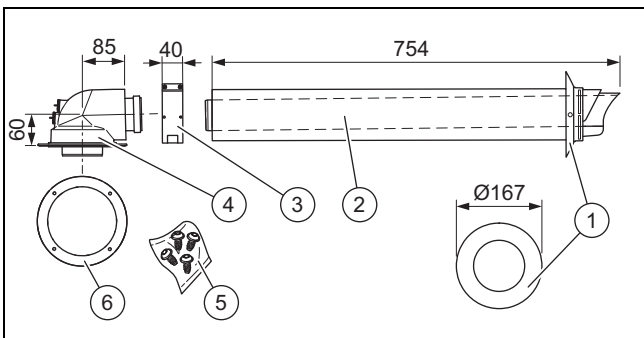
Flue gas can escape if a flue gas pipe is damaged.

- ▶ Use only one of the enclosed small self-tapping screws.

2. Secure the air pipes to each other by screwing the overlapping air pipes together using the supplied self-tapping screws (1) on the underside.
3. Seal the gap on the telescopic air pipe using the supplied adhesive tape (2).
4. Install the wall duct. (→ Page 15)

5.1.6 Installing the direct, rear-side wall duct for buildings over 18 m – article number 0010035513

5.1.6.1 Scope of delivery, article number 0010035513



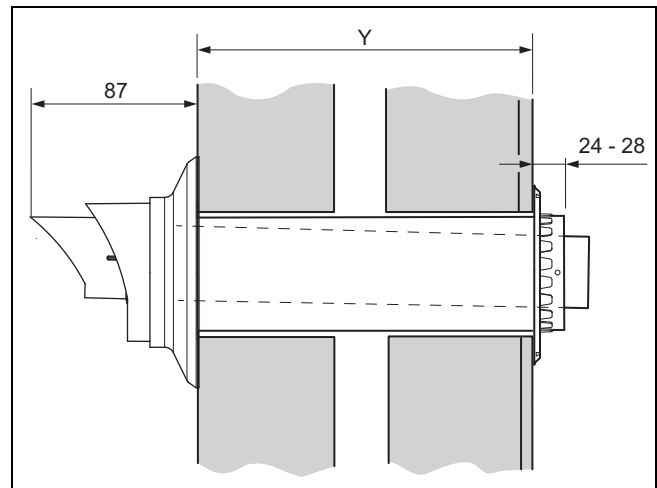
- | | | | |
|---|-----------------------------------|---|--------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 4 | 87° elbow |
| 2 | Horizontal wall/roof duct | 5 | Screws (8 x) |
| 3 | 40 mm clamp | 6 | Seal |



Note

Not all components are required for the installation.

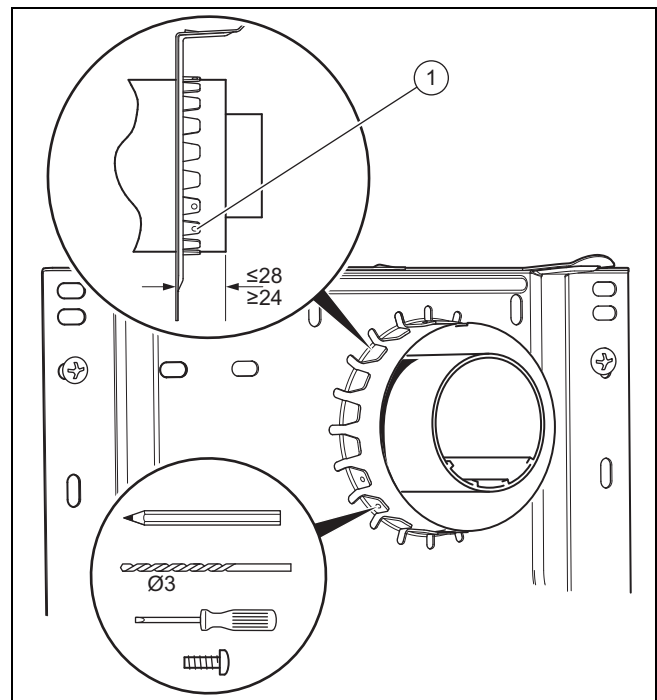
5.1.6.2 Determining the pipe length and the location of the wall duct



1. Determine the pipe length (→ Installation instructions for the boiler) and define the location of the wall duct.
2. Measure the clearance Y from the external wall to the installation surface for the boiler.
3. Set the required pipe length:
 - At least: $Y + 24$ mm
 - Maximum: $Y + 28$ mm
 - If you install the wall collar, add 12 mm to the total pipe length.
 - If the terminal is below a roof overhang or a horizontal surface, you can pull the wall duct up to 500 mm out of the wall in order to guarantee that the flue gases are extracted without any obstructions.

5.1.7 Installing the wall duct

1. Drill a hole.
 - Diameter: 110 mm
2. Push the air/flue pipe from outside and through the wall and the terminals.



3. Pull the wall duct out to the required depth.

4. Use the locking screws to secure the wall duct.
 - Use at least three of the six holes **(1)** that are available in the terminals to secure the flue pipe.
5. Install the wall collar.
6. Before you install the boiler, check that the wall duct is safely secured in place.
7. Seal the installation gap using a suitable material (e.g. mortar).
8. Install the boiler (→ Installation instructions for the boiler).

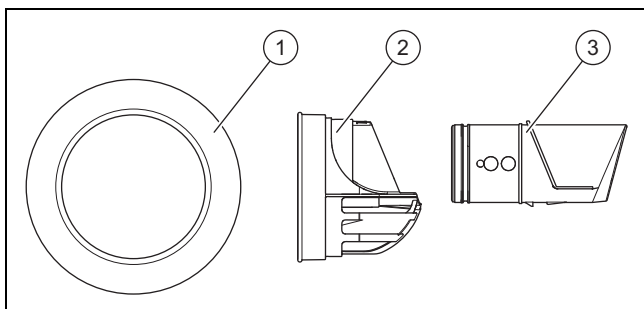
5.1.8 Black terminal set – article number 0020219538

5.1.8.1 Scope of delivery



Note

Not valid for article number 0010035513



- | | | | |
|---|----------------|---|----------|
| 1 | Wall collar | 3 | End pipe |
| 2 | Terminal piece | | |

5.1.8.2 Installing the black terminal (change of colour)

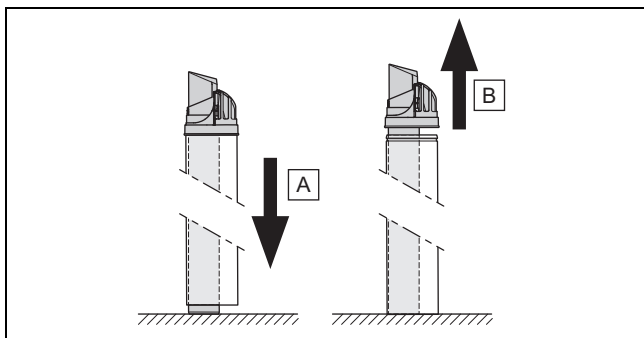


Note

You must install the terminal sets before installing the flue pipework.

Condition: Terminal secured using screws

- ▶ Undo the lateral screws.



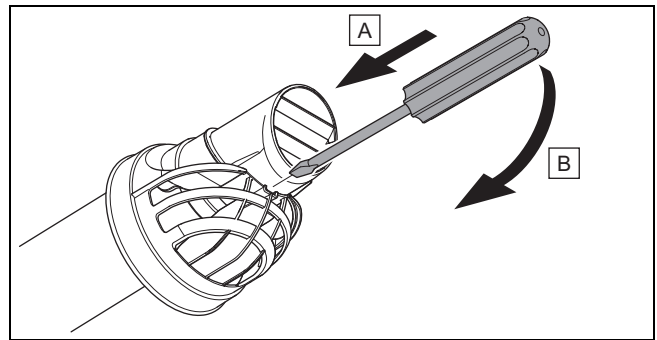
1. Detach the terminal with the flue pipe by pushing the air pipe to the floor.



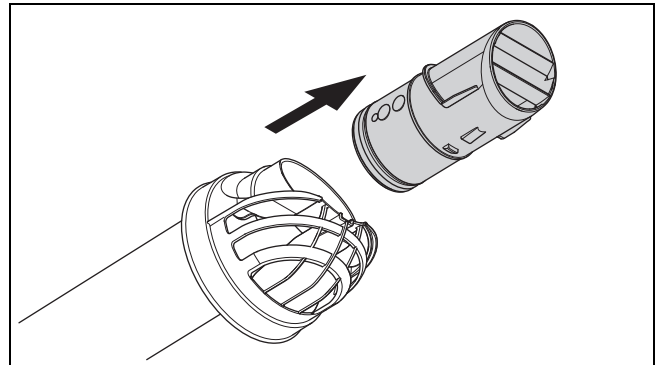
Note

You cannot reuse the terminal as detaching the terminal damages the latching lugs in the terminal.

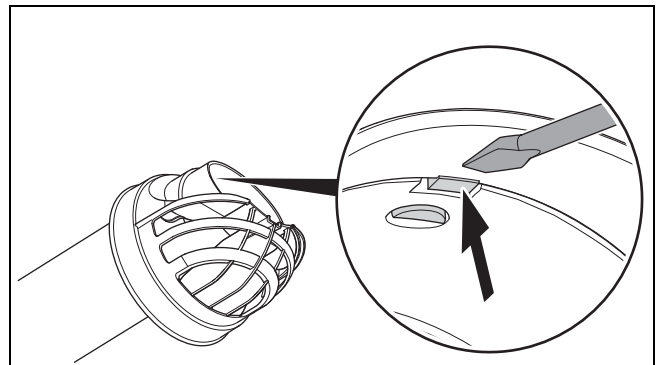
2. Pull the terminal from the air pipe together with the flue pipe.



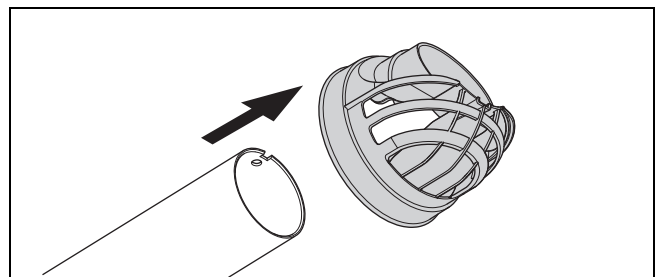
3. Release the catch between the opening piece and the end pipe.



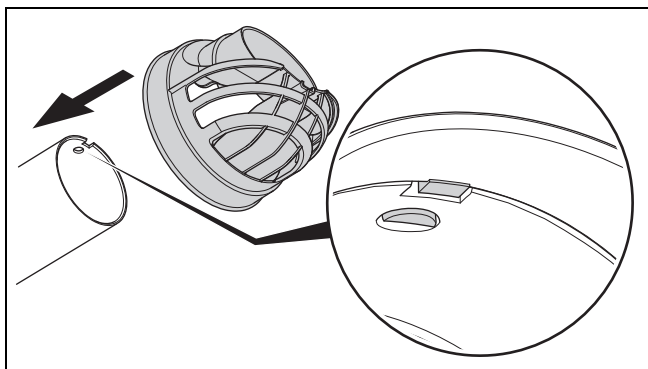
4. Pull the end pipe from the opening piece.



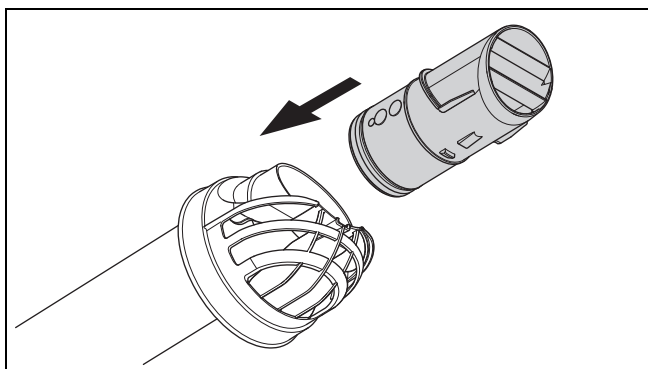
5. Release the catch between the opening piece and the flue pipe.



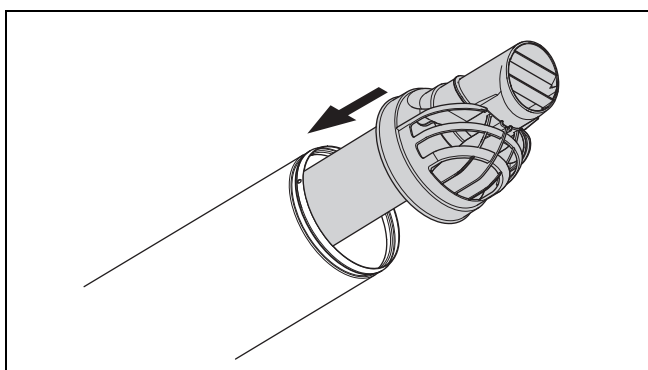
6. Pull the opening piece from the flue pipe.



7. Slide the new opening piece onto the flue pipe until you hear the opening piece click into place.



8. Slide the end pipe onto the opening piece until you hear the end pipe click into place.



9. Slide the flue pipe with the new terminal into the air pipe until you hear the terminal click into place.

Condition: Terminal secured using screws

- ▶ Attach the terminal using the side screws.

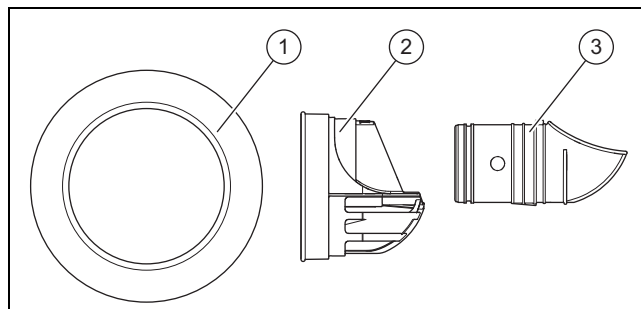
5.1.9 Deflector set



Note

Not valid for article number 0010035513

5.1.9.1 Scope of delivery



- | | | | |
|---|---------------|---|-----------|
| 1 | Wall collar | 3 | Deflector |
| 2 | Opening piece | | |

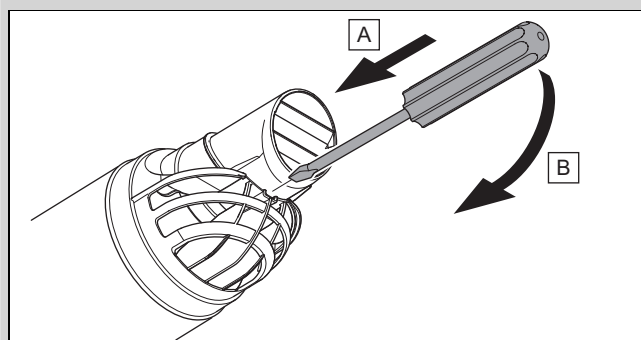
- Deflector set, DN 60, PP, black (article number 0020219535)
- Deflector set, DN 60, PP, white (article number 0020219536)

5.1.9.2 Installing the deflector set

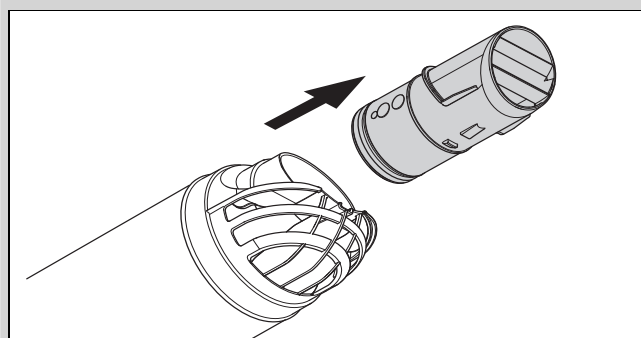
Condition: Replacing the deflector set (change of colour)

- ▶ In the event of a change of colour, replace the deflector set, including the wall collar (→ Page 16).
- ▶ Install the deflector, instead of the end pipe, on the opening piece.

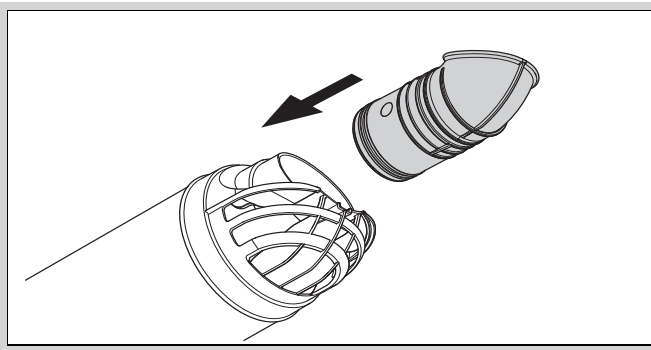
Condition: Replacing the end pipe only



- ▶ Release the catch between the opening piece and the end pipe.

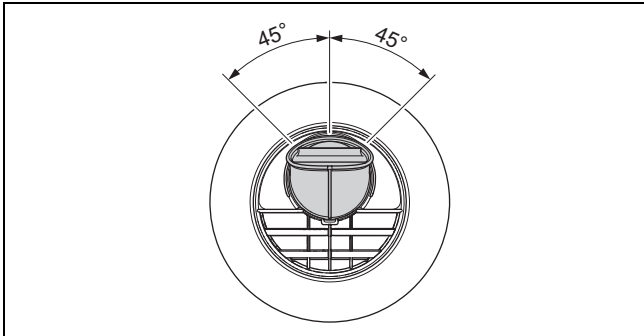


- ▶ Pull the end pipe from the opening piece.



- ▶ Slide the deflector onto the opening piece until you hear the deflector click into place.

5.1.9.3 Adjusting the deflector



- ▶ Set the terminal to the required position.
 - The flue gas stream is directed upwards at an angle of approx. 45° when the deflector is set in the centre position.
 - If necessary, the deflector terminal can be rotated 45° anti-clockwise or clockwise. These setting options mean that the flue system can be further optimised.

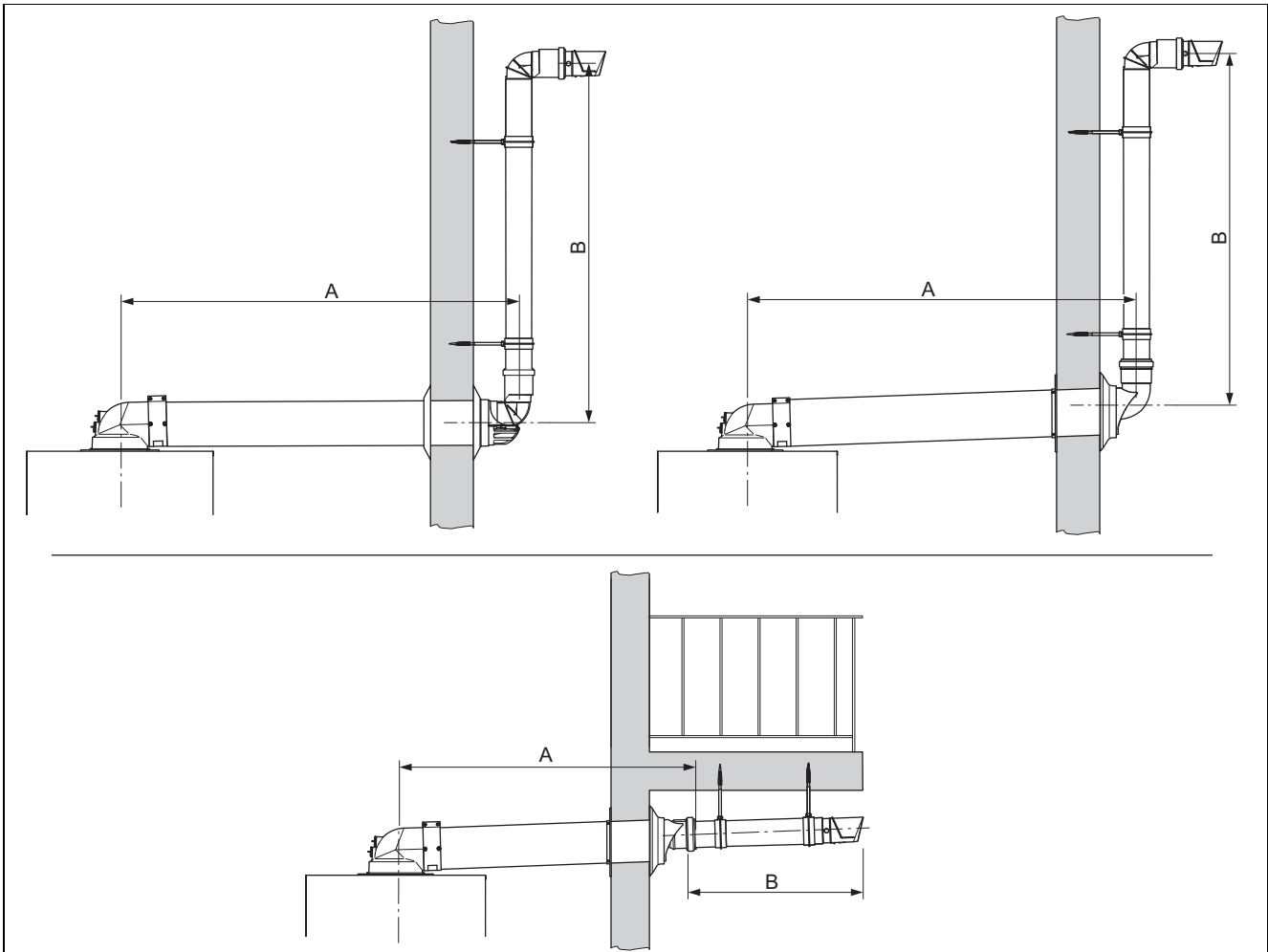
5.1.10 Variable terminal set (VTK)

5.1.10.1 Maximum permissible pipe lengths



Note

Not valid for article number 0010035513



	Pipe length A												Maximum pipe length A + B
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	
	Pipe length B ¹⁾												
ENERGY	9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	10.0
ULTIMATE	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0
ESSENTIAL	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0
EASICOM	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0
BETACOM	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0
MICRACOM	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0
COMPACT	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	9.0

1) The inclusion of additional elbows in the flue system reduces the pipe length as follows:

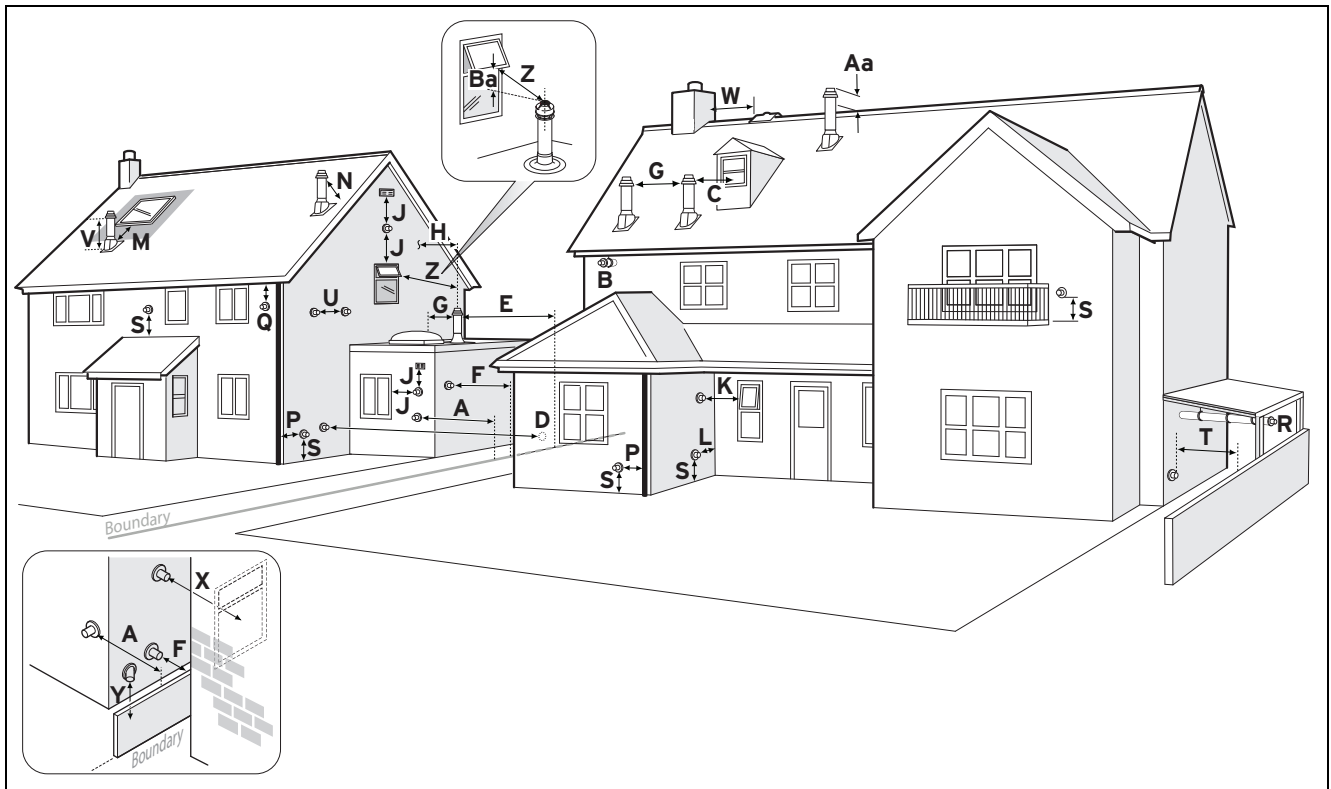
- By 0.5 m for each 45° diversion
- By 1.0 m for each 90° elbow

You can vary the flue pipe length "A" and the concentric pipe length "B". However, the total pipe length must not be exceeded (→ Installation instructions).

Example: "A" = 4.0 m + "B" = 6.0 m = 10 m

The terminal for the flue system set should lie at least 2 m above the ground surface.

5.1.10.2 Position of the air/flue terminal

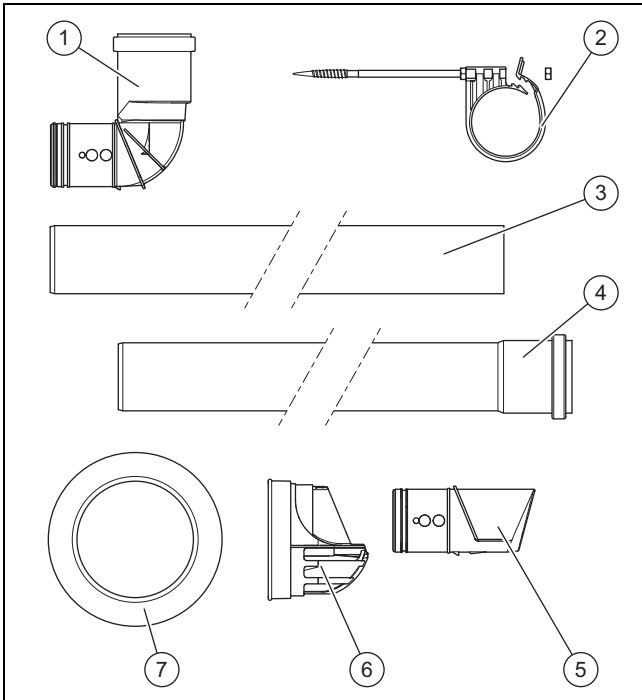


5.1.10.3 Positioning the terminal of a fan-supported flue system

	Installation site	Dimensions
A	Adjacent to a boundary.	300 mm
B ¹⁾	The dimension below eaves, balconies and car ports can be reduced to this value, as long as the flue terminal is extended to clear any overhang. External flue joints must be sealed with a suitable silicon sealant.	25 mm
C	Between a vertical flue terminal and a window or dormer window on a roof.	1,500 mm
D	Between terminals facing each other.	1,200 mm
E	Vertical flue clearance, adjacent to a boundary line.	300 mm
F ²⁾	Distance to a boundary line, unless it will cause a nuisance. BS 5440:Part 1 recommends that care is taken when siting terminal in relation to boundary lines.	600 mm
G	Minimum clearance from a skylight to a vertical flue or to another vertical flue.	Min. 300 mm
H	Vertical flue clearance, to noncombustible building material. Vertical flue clearance to combustible building material.	500 mm 1,500 mm
J	Above, below and either side of an opening door, air vent or opening window.	300 mm
K	Diagonally to an opening door, air vent or opening window.	600 mm
L ²⁾	To an internal or external corner.	200 mm
M	Below a Velux window. Above or to either side of the Velux window.	2,000 mm 600 mm
N	From a pitched roof. In regions with heavy snowfall.	400 mm 500 mm
P	From vertical drain pipes and soil pipes.	25 mm
Q	Below eaves. Below gutters, pipe and drains.	200 mm 75 mm
	<p>1) There should be no ventilation/opening in the eaves within 300 mm distance of the terminal.</p> <p>2) These dimensions comply with the building regulations, but they may need to be increased to avoid wall staining and nuisance from plumbing depending on site conditions.</p> <ul style="list-style-type: none"> - Terminals must be positioned so to avoid combustion products entering the building. - Support the flue at approximately one metre intervals and at a change of direction, use suitable brackets and fixings. - Installations in car ports are not recommended. - The flue cannot be lower than 1 metre from the top of a lightwell due to the build up of combustion products. - Dimensions from a flue terminal to a fanned air inlet to be determined by the ventilation equipment. 	

	Installation site	Dimensions
R	The dimension below eaves, balconies and car ports can be reduced to this value, as long as the flue terminal is extended to clear any overhang. External flue joints must be sealed with suitable silicon sealant.	25 mm
S	Above adjacent ground or balcony.	300 mm
T ²⁾	Distance to a surface facing a terminal, unless it will cause a nuisance. BS 5440: Part 1 recommends that care is taken when siting terminals in relation to surfaces facing a terminal.	600 mm
U	Clearance alongside another terminal.	300 mm
V	Above roof level.	300 mm
W	Minimum to vertical structure on roof, roof vent.	Min. 300 mm
X	Minimum to opening in adjacent building.	Min. 2000 mm
Y	Minimum at an angle to a boundary which is not less than 300 mm to the terminal	Min. 600 mm
Z	Minimum measured to the nearest corner of the OPEN window	Min. 600 mm
Aa	No more than this value above ridge.	Max. 300 mm
Ba	Not less than this value below the opening window	Min. 300 mm
	<p>1) There should be no ventilation/opening in the eaves within 300 mm distance of the terminal.</p> <p>2) These dimensions comply with the building regulations, but they may need to be increased to avoid wall staining and nuisance from plumbing depending on site conditions.</p> <ul style="list-style-type: none"> - Terminals must be positioned so to avoid combustion products entering the building. - Support the flue at approximately one metre intervals and at a change of direction, use suitable brackets and fixings. - Installations in car ports are not recommended. - The flue cannot be lower than 1 metre from the top of a lightwell due to the build up of combustion products. - Dimensions from a flue terminal to a fanned air inlet to be determined by the ventilation equipment. 	

5.1.10.4 Scope of delivery



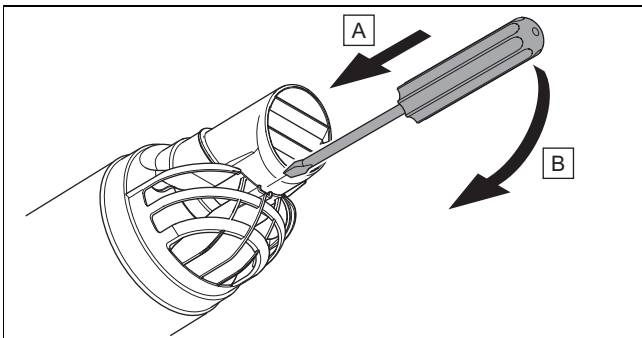
- | | | | |
|---|--------------------------------|---|---|
| 1 | 87° elbow (2 x) | 5 | End pipe |
| 2 | Pipe clamps (3 x) | 6 | Opening piece |
| 3 | Extension (1 m) without sleeve | 7 | Wall collar (only included in the variable terminal kit, black) |
| 4 | Extension (1 m) with sleeve | | |

- Variable terminal set, black, article number 0020219531
- Variable terminal set, white, article number 0020219532 (no wall collar)

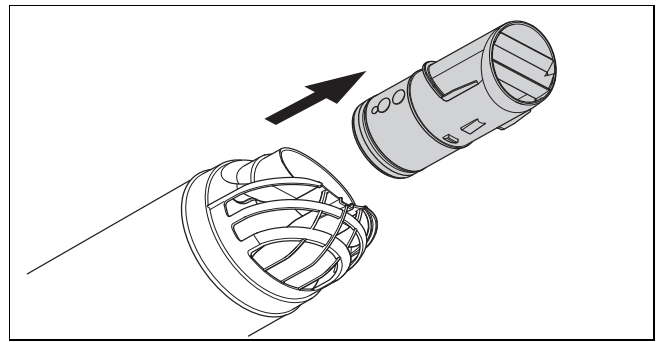
5.1.10.5 Installing the black variable terminal kit (VTK)

- ▶ Proceed as described in section "Installing the black terminal (change of colour)" (→ Page 16).

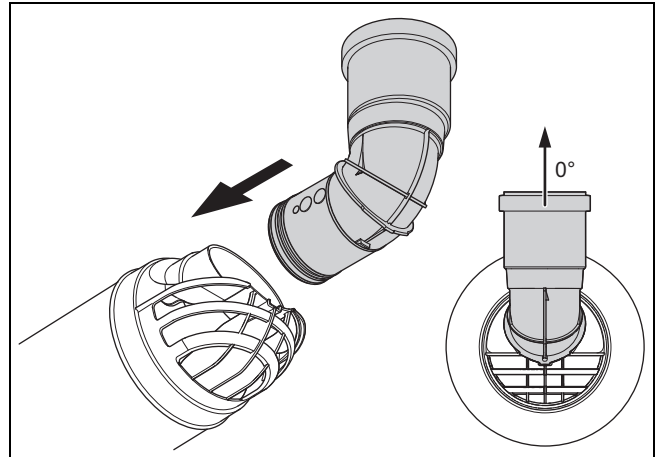
5.1.10.6 Installing the white variable terminal kit (VTK)



1. Release the catch between the opening piece and the end pipe.



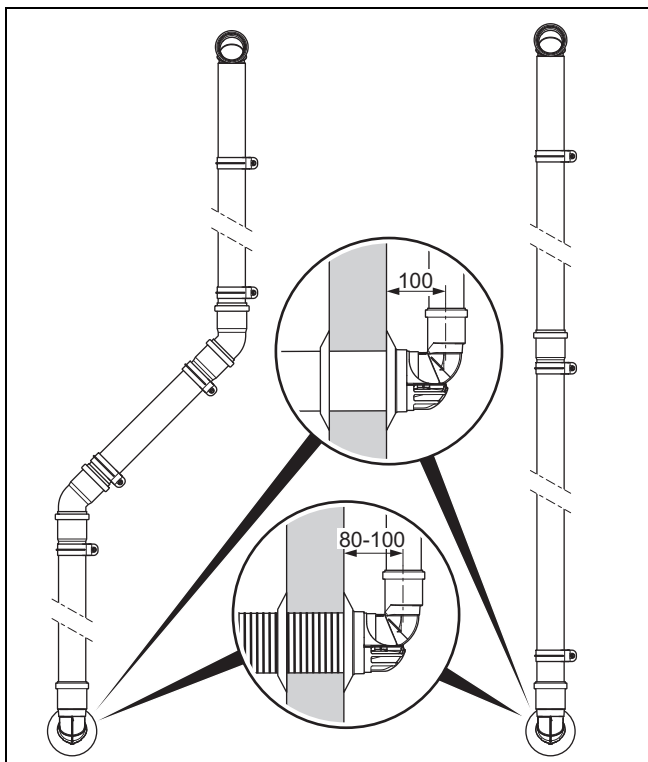
2. Pull the end pipe from the opening piece.



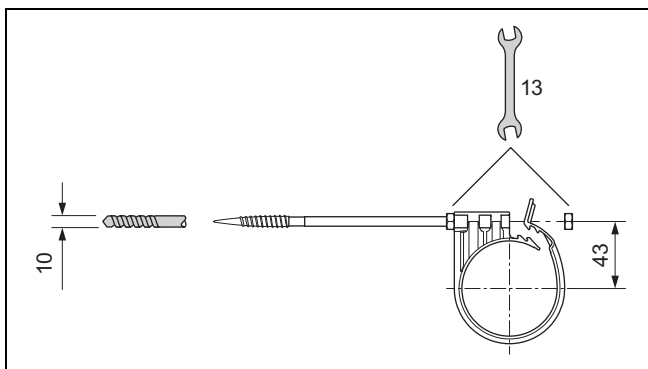
3. Slide the first 87° elbow onto the opening piece until the 87° elbow audibly clicks into place.

5.1.10.7 Installing extensions

1. Install the flue system from the 87° elbow to the flue outlet.
 - Begin with the extension with the sleeve. To be able to install the second 87° elbow with the end pipe, you must install the extension without a sleeve last.
 - Allow expansion space of 1 cm in each sleeve.
 - Ensure that all pipe joints are absolutely leak-tight.

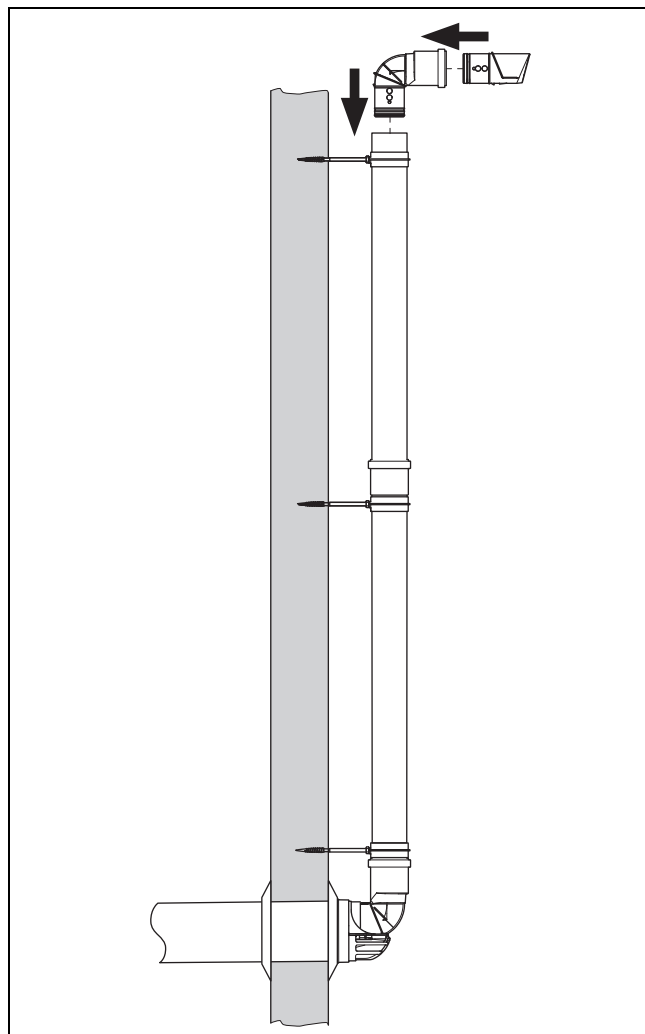


2. Secure the extensions to the wall using the pipe clamps.
 - Use one pipe clamp for each extension directly beside the sleeve.
 - Upstream of each elbow, install another pipe clamp on the extension.



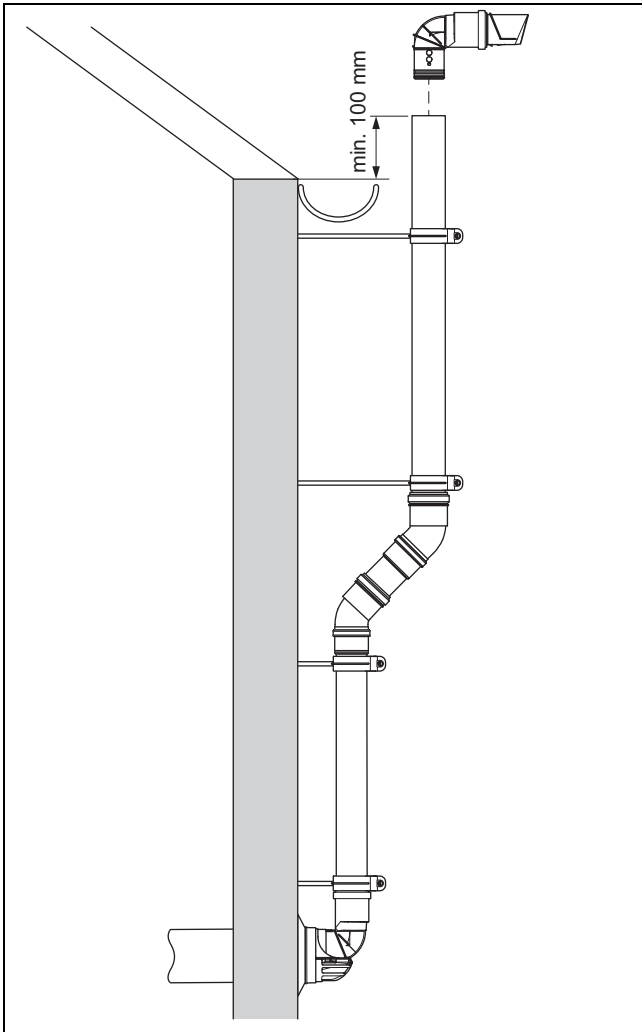
3. Drill the fastening holes away from the centre.

5.1.10.8 Installing the end pipe



1. Install the second 87° elbow into the last extension.
2. Securely insert the end pipe into the 87° elbow until the end pipe clicks into place in the seal.

5.1.10.9 Routing extensions for the variable terminal set around eaves



When installing the variable terminal set around eaves, additional M8 threaded rods are required for the pipe clamps. The threaded rods are commercially available.

- If required, install additional 45° elbows.

5.1.11 Installing the horizontal wall duct



Danger!
Risk of poisoning due to escaping flue gas.

If you select an unsuitable installation site for the air/flue pipe, flue gas may be allowed to enter the building.

- Observe the existing regulations with regard to the clearances to windows and ventilation openings.



Danger!
Risk of poisoning due to escaping flue gas.

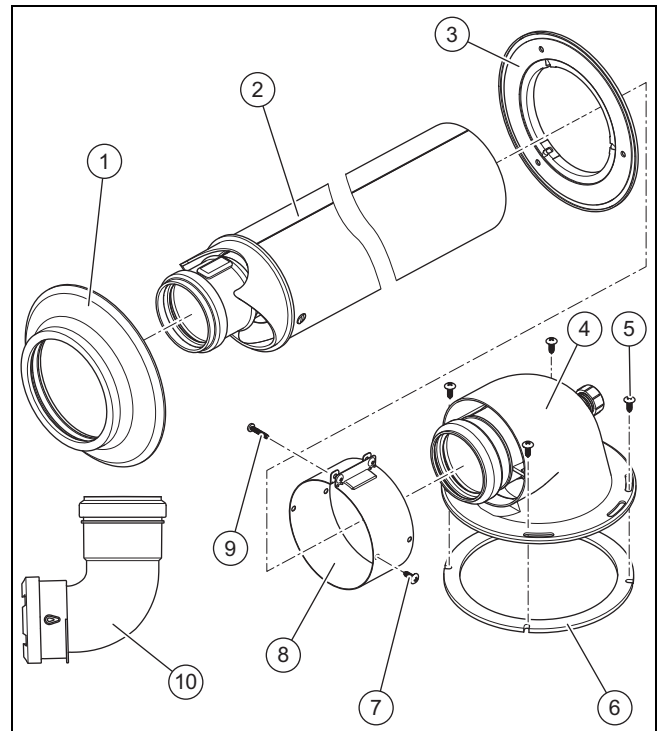
Condensate that collects inside the flue in certain areas can damage the flue pipework seals.

- Lay the horizontal flue pipe with a downward gradient of 3° to the product; 3° cor-

responds to a downward gradient of approx. 50 mm per metre of pipe length.

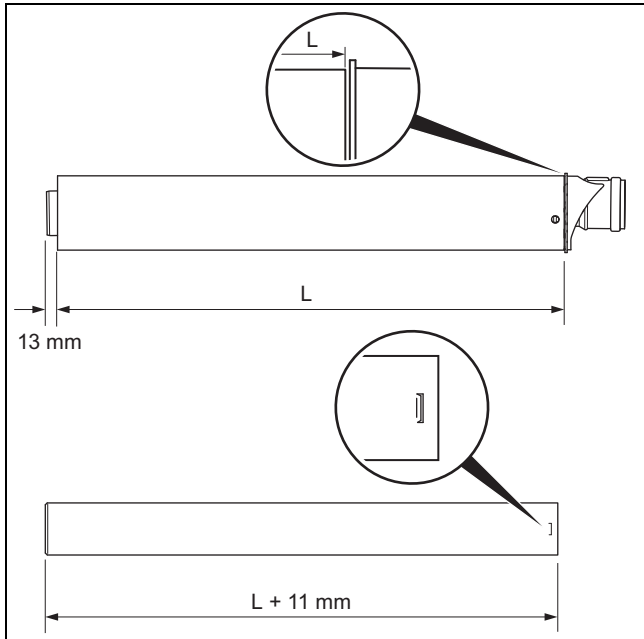
- In doing so, note that the air/flue pipe must be centred in the wall hole.

5.1.11.1 Scope of delivery, article number 0010024719



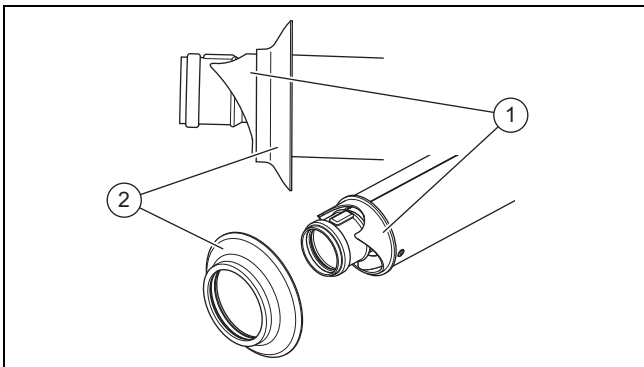
- | | | | |
|---|--------------------|----|---|
| 1 | Outer wall collar | 7 | Screws (2 pcs) |
| 2 | Standard wall duct | 8 | Air pipe clamp |
| 3 | Inner wall collar | 9 | Screws (2 pcs) |
| 4 | Connection elbow | 10 | 87° adapter for connecting the variable terminal set (VTK), black |
| 5 | Screws (4 pcs) | | |
| 6 | Seal (installed) | | |

5.1.11.2 Shortening the wall duct

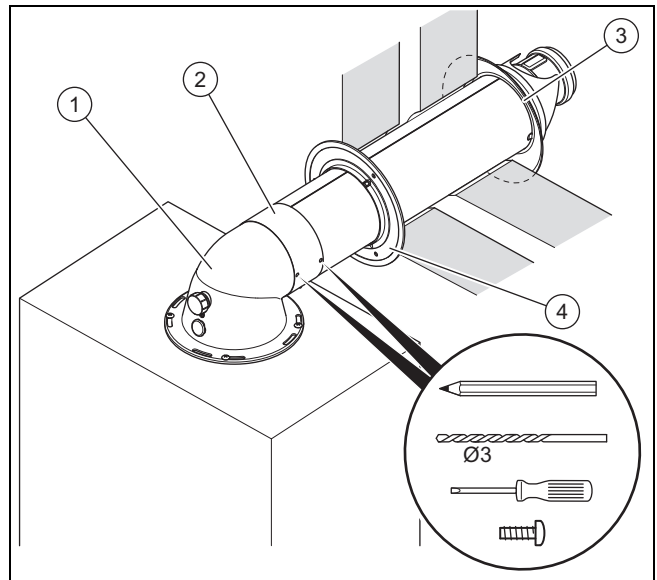


1. Pull the flue pipe from the air pipe. To do this, turn the flue pipe in order to loosen it from the lock.
2. Shorten the air/flue pipe to the required length.
 - If you install the wall collar, add 12 mm to the total pipe length.
 - Shorten the air pipe at the opposite end to the terminal.
 - Shorten the flue pipe at the opposite end to the lock.
3. Deburr the sawn-off pipe end in order to prevent damage the seal when installing the flue pipe.
4. Slide the flue pipe into the air pipe.
 - Ensure that the flue pipe's recess snaps into place in the air pipe's latching lug.

5.1.11.3 Installing the wall duct



1. If required, secure the outer wall collar (2) to the centring ring (1) on the wall duct.



2. Remove the connection elbow that has been provisionally fitted.
3. Slide the wall duct into the wall until the end of the wall duct only protrudes slightly from the internal wall.
 - Secure the air/flue pipe with mortar and leave the mortar to harden.
 - If required, you can fit the inner wall collar (3) in this position and pull the wall duct back as far as the connection elbow.
4. Install the connection elbow (1) on the boiler using the four screws.
5. Insert the wall duct into the connection elbow.
6. Position the air pipe clamp (2) centrally above the connection point.
7. If the air pipe's seam is correctly aligned facing upwards, mark the two holes that are to be drilled into the air pipe.
8. Remove the air pipe clamp.



Danger!

Risk of poisoning due to escaping flue gas.

Flue gas can escape if the flue pipe is damaged.

- ▶ Take care that the flue pipe is not damaged when drilling.

9. Drill both holes – one in the connection elbow and one in the wall duct.
10. Secure the air pipe clamp using the screws.
11. Slide the inner wall collar (3) back against the wall.
12. Check whether the rubber seal on the outer wall collar (4) is securely sealed against the wall.
13. Install the boiler (→ Installation instructions for the boiler).

5.1.12 Installing the variable terminal set (VTK)

5.1.12.1 Minimum clearances for the flue gas terminal

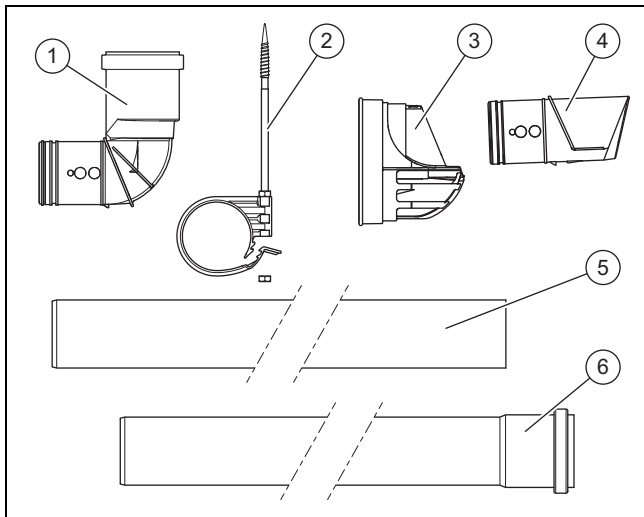
You must comply with the minimum clearances for the flue gas terminal that are defined in BS 5440, unless the boiler's manufacturer has given approval to use shorter minimum clearances that are not considered to be safety-critical.

The boiler manufacturer has reduced the minimum clearances for the flue gas terminal and specifies this in the installation instructions for the boiler. These are minimum clearances that are to be used for all types of installation, except for the installation of the variable terminal set (VTK).

If a variable terminal set is connected to horizontal flue pipework, terminal clearances are reduced for the air inlet. The terminal clearances on the "new" flue outlet at the end of VTK remain unchanged.

On the VTK, the minimum clearances for the air inlet A, B and C (→ Installation instructions for the boiler) to openings (e.g. a window) are reduced to 150 mm. This means that the terminal will be at the horizontal flue pipework when a variable terminal set is connected to the air inlet and can therefore be installed at a clearance of less than 300 mm from a window opening or a ventilation tile.

5.1.12.2 Scope of delivery, article number 0020219532



1	87° elbow (2 pcs)	4	End pipe
2	Pipe clamps (3 pcs)	5	Extension (1 m) without sleeve
3	Terminal piece	6	Extension (1 m) with sleeve



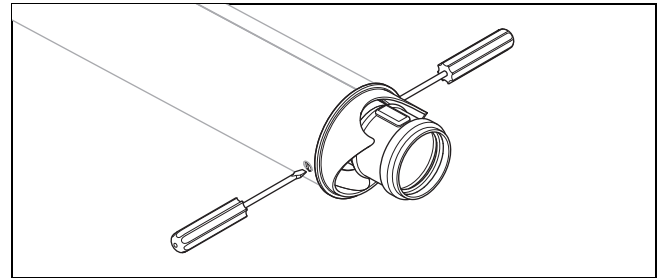
Note

Component 3 is not required for the installation.

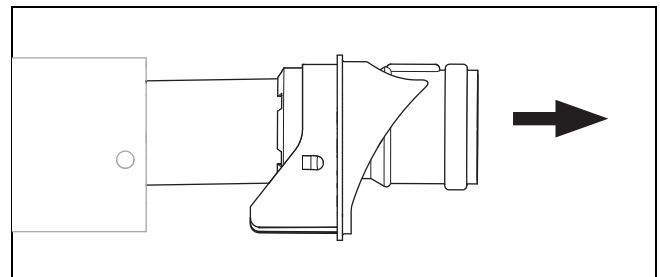
5.1.13 Installing the variable terminal set on the façade

5.1.13.1 Installing the variable terminal

1. If required, before starting the installation work, decommission the boiler and secure it against being inadvertently started up again.
2. Remove the wall duct from the terminal.



3. Use an 8 mm screwdriver to press the latching lugs inwards.



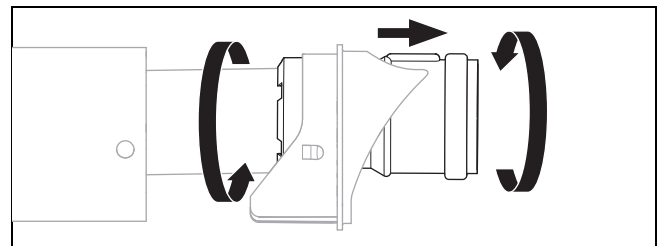
Danger!

Risk of poisoning due to escaping flue gas.

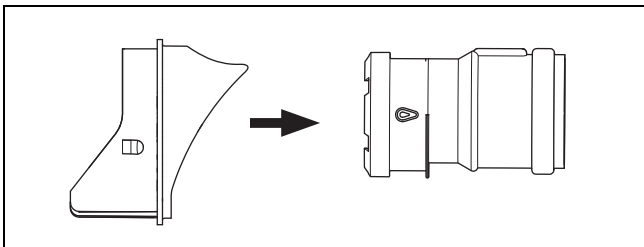
If you turn the flue pipe when removing the terminal from the air pipe, the subsequent flue pipe may come loose from the spacer.

- Ensure that the flue pipe does not twist when you remove it.

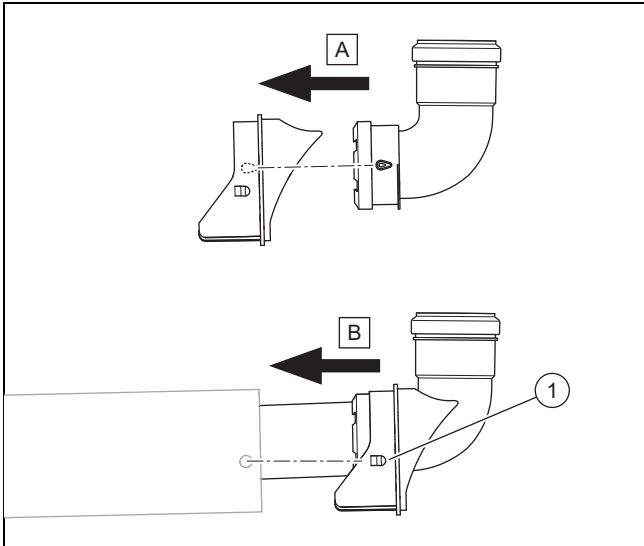
4. Pull the terminal out of the air pipe together with the flue pipe.



5. Release the catch between the terminal and the flue pipe by twisting the two components in opposite directions.
6. Remove the terminal from the flue pipe.



7. Pull the terminal piece out of the pipe adapter.



Danger!
Risk of poisoning due to escaping flue gas.

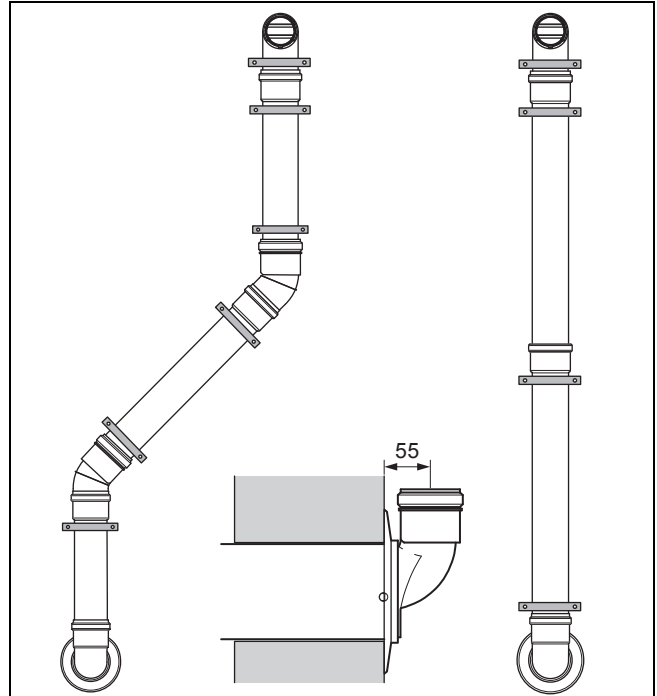
When disconnecting the pipes, flue gases may escape.

- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

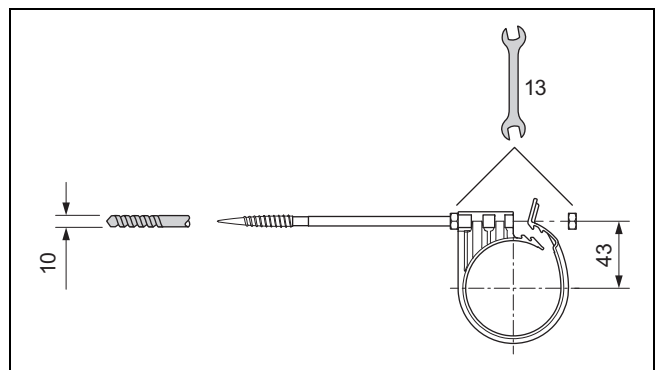
8. Push the 87° elbow into the pipe adapter and allow it to lock into place.
9. Push the variable terminal onto the flue pipe so that it snaps into place.
10. Slide the flue pipe, together with the terminal, back into the air pipe.
11. Carefully slide the flue pipe back into the sleeve of the pipe or elbow located behind it.
12. Make sure that the two latching lugs (1) snap into place.
13. Install the wall seal on the variable terminal.

5.1.13.2 Installing extensions

1. Install the flue system from the 87° elbow to the flue outlet.
 - Begin with the extension with the sleeve. To be able to install the second 87° elbow with the end pipe, you must install the extension without a sleeve last.
 - Allow expansion space of 1 cm in each sleeve.
 - Ensure that all pipe joints are absolutely leak-tight.

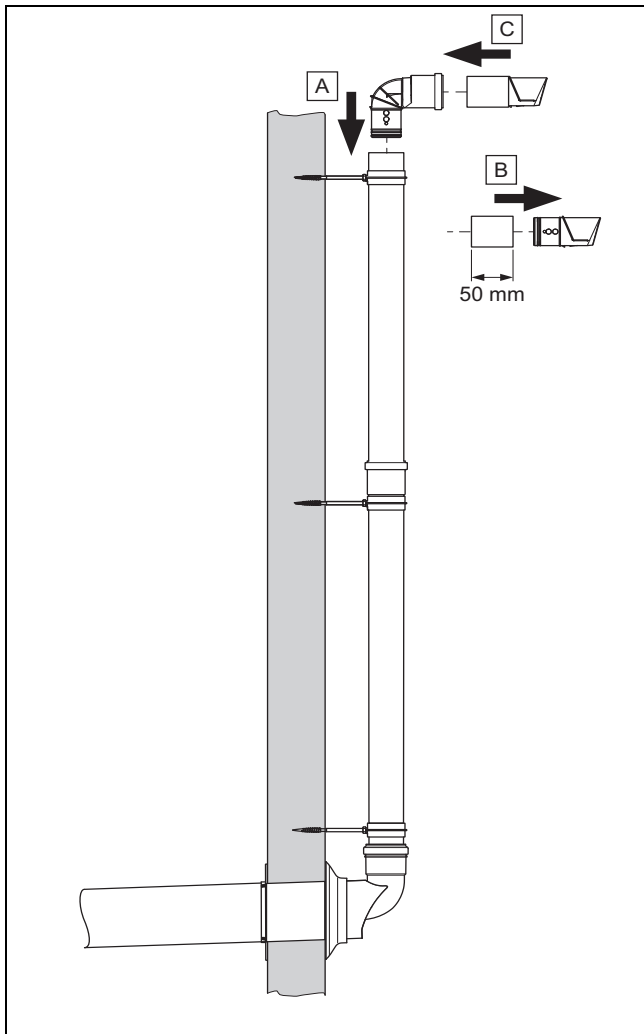


2. Secure the extensions to the wall using the pipe clamps.
 - Use one pipe clamp for each extension directly beside the sleeve.
 - Upstream of each elbow, install another pipe clamp on the extension.



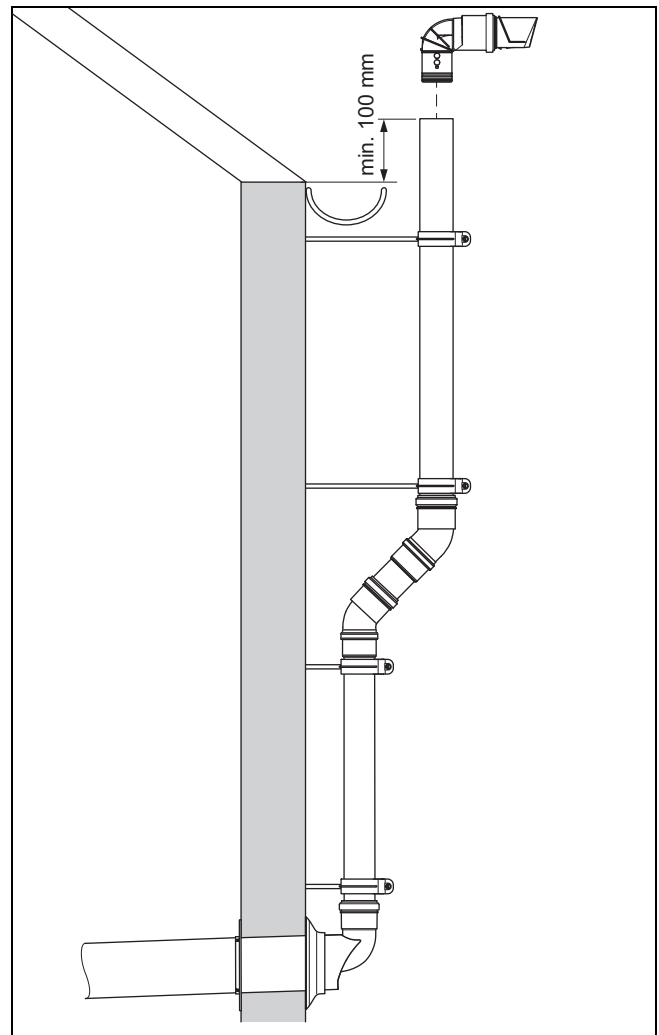
3. Drill the fastening holes away from the centre.

5.1.13.3 Installing the end pipe



1. Install the second 87° elbow into the last extension (step A).
2. To secure the end pipe, place a 50 mm extension piece over the end pipe (step B).
3. Insert the end pipe securely into the 87° elbow (step C).

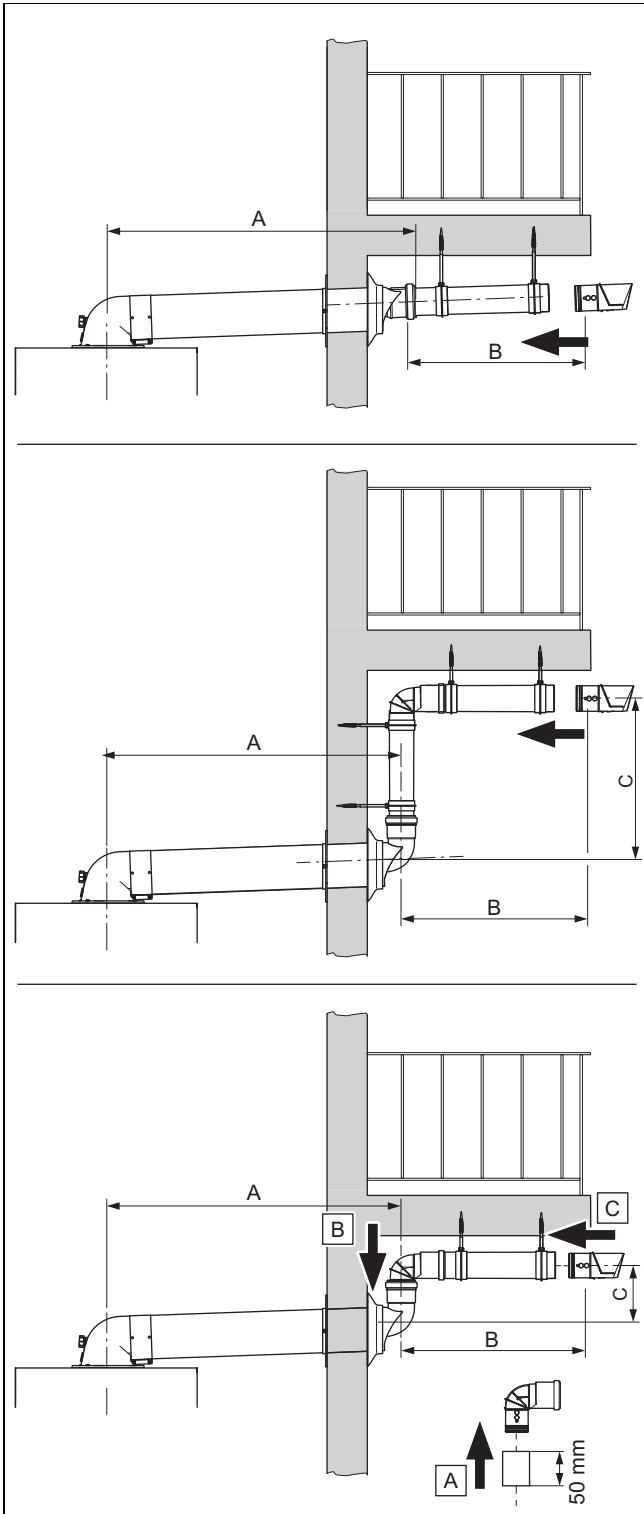
5.1.13.4 Routing extensions for the variable terminal set around eaves



When installing the variable terminal set around eaves, additional M8 threaded rods are required for the pipe clamps. The threaded rods are commercially available.

- If required, install additional 45° elbows.

5.1.14 Installing the variable terminal set below the balcony



1. When installing with an offset: Install the variable terminal (→ Page 26).
2. Secure the extensions with the pipe clamps below the balcony or on the wall (→ Page 27).
3. Insert the end pipe securely into the last extension.

5.1.15 Installing the vertical roof duct, 60/100 mm diameter

5.1.15.1 Installation instructions



Danger!

Risk of poisoning due to escaping flue gas and risk of material damage due to the roof duct shearing off.

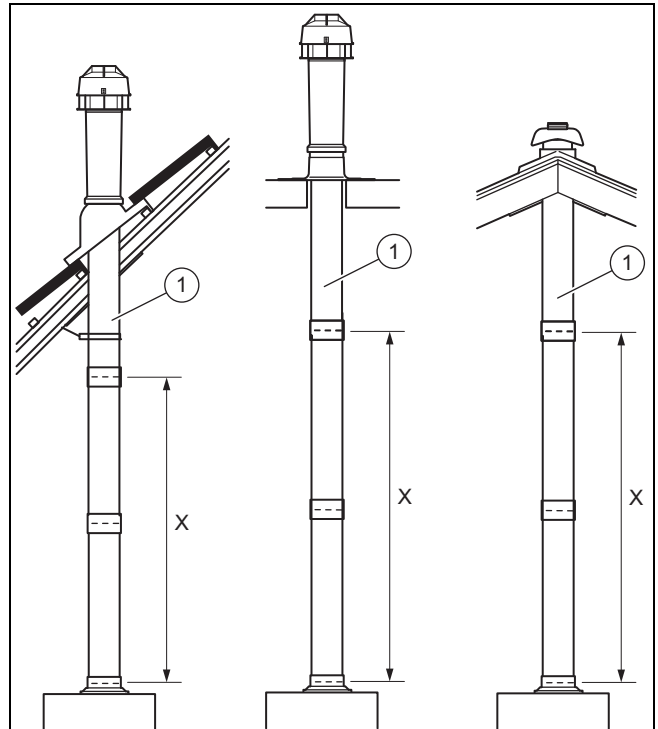
Snow and ice sliding down pitched roofs may break off the vertical roof duct where it exits the roof.

- ▶ In regions where heavy snow falls/extensive ice formation can be expected, install the vertical roof duct close to the ridge or install a snow guard mesh above the roof duct.

The vertical roof ducts can be shortened under the roof. However, to ensure that the fixing bracket is secured tightly, the lengths must still be sufficient.

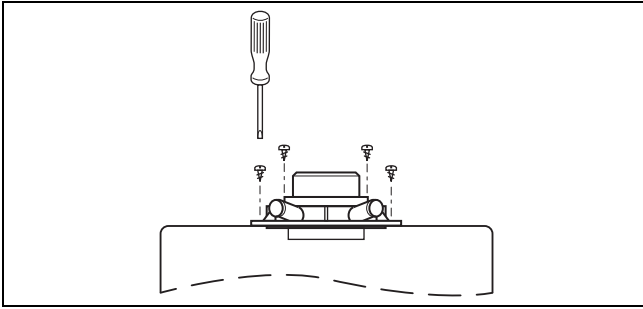
- ▶ Shorten the flue pipe and the air pipe by the same amount.

5.1.15.2 Determining the pipe lengths for the vertical, concentric air/flue pipe



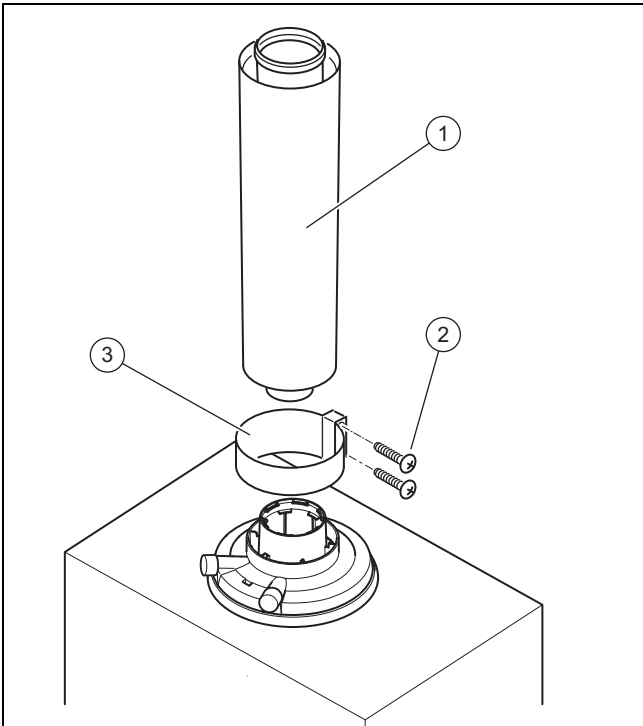
- ▶ Determine the required pipe length: X plus roof duct (1) (→ Installation instructions).
 - The pipe length is reduced by 0.5 m for each 45° elbow that is installed.
 - The pipe length is reduced by 1 m for each 87° elbow that is installed.
 - Required diameter of the hole for the roof duct: 150 mm

5.1.15.3 Installing the 60/100 mm connection piece



1. Fit the connection piece onto the boiler's flue gas connection. In doing so, ensure that the connection piece is aligned correctly.
2. Secure the connection piece using the 4 screws.

5.1.15.4 Installing extensions



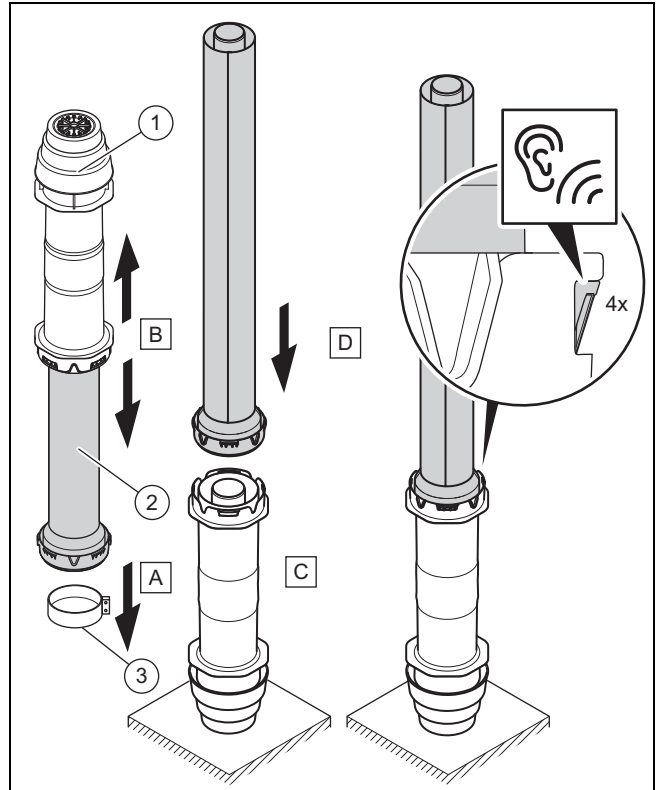
1. Fit the extension onto the connection piece.
2. If you do not insert a sliding sleeve, install the air clamp directly onto the product.
3. Install the required extensions as far as the roof duct.
 - Install the last extension only once the roof duct has been positioned.
4. Connect all of the pipe joints with air pipe clamps. (→ Page 43)

5.1.15.5 Assembling the vertical roof duct



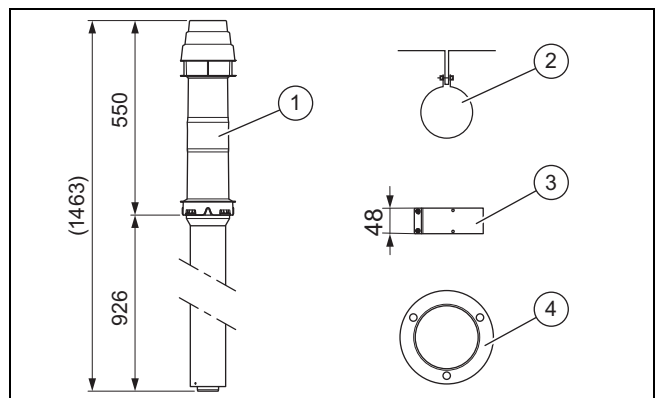
Note

In its as-delivered condition, the lower pipe of the vertical roof duct is pushed into the upper pipe.



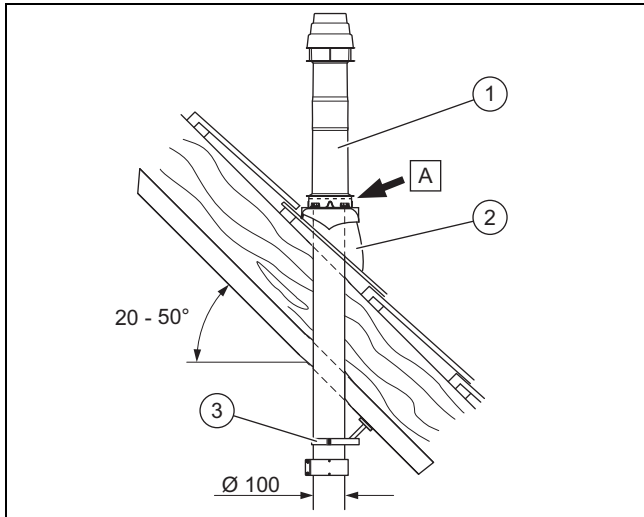
1. Remove the clamp fitting (3) from the inside of the flue pipe (2) (step A).
2. Separate the flue pipe (2) from the terminal piece (1) by pulling them apart (step B).
3. Turn the terminal piece over and set it on the floor (step C).
4. Slide the flue pipe (2) downwards onto the terminal piece (1) until all four fastenings click into place (step D).

5.1.15.6 Scope of delivery article number 0020230604 (black, with collar)



- | | | | |
|---|--------------------|---|-----------------------|
| 1 | Vertical roof duct | 3 | 48 mm air-pipe collar |
| 2 | Fixing bracket | 4 | Cover plate |

5.1.15.7 Installing the pitched-roof duct



A Position of the internal flue pipe seal

1. Determine the installation site of the roof duct so that there is sufficient distance behind the product in order to connect the product to the heating installation.
2. Insert the pantile (2).
3. Insert the roof duct (1) through the pantile from above and push it down until the cover plate is seated firmly.
 - Ensure that the internal flue pipe seal lies above the roof.
4. Align the roof duct vertically.
5. Secure the roof duct to the roof construction using the fixing bracket (3).
6. Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve. If you do not insert a sliding sleeve, you must always install the 48 mm clamp directly on the product.

7. Alternatives 1:

Condition: Roof duct with extension

- ▶ Install 60/100 mm diameter extensions. (→ Page 35)
- ▶ Install the elbows (→ Page 38).
- ▶ Install the sliding sleeve. (→ Page 35)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 43)

7. Alternatives 2:

Condition: Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 35)

5.1.15.8 Installing the flat-roof duct

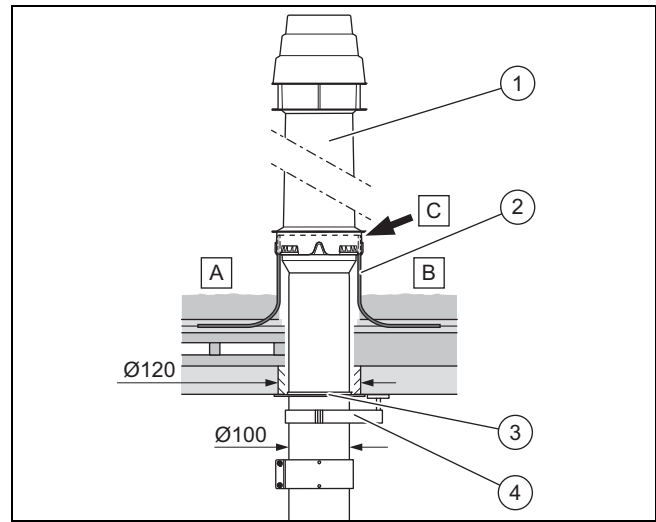


Caution.

Risk of damage to the structure of the building.

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.



A Cold roof

B Warm roof

C Position of the internal flue pipe seal

1. Determine the installation site for the roof duct.
2. Insert the flat roof penetration collar (2).
3. Glue the flat roof penetration collar firmly in place.
4. Insert the roof duct (1) through the flat roof penetration collar from above and push it down until seated firmly.
 - Ensure that the internal flue pipe seal lies above the roof.
5. Align the roof duct vertically.
6. Put the cover plate (3) on.
7. Secure the roof duct to the roof construction using the fixing bracket (4).
8. Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve. If you do not insert a sliding sleeve, you must always install the 48 mm clamp directly on the product.

9. Alternatives 1:

Condition: Roof duct with extension

- ▶ Install 60/100 mm diameter extensions. (→ Page 35)
- ▶ Install the elbows (→ Page 38).
- ▶ Install the sliding sleeve. (→ Page 35)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 43)

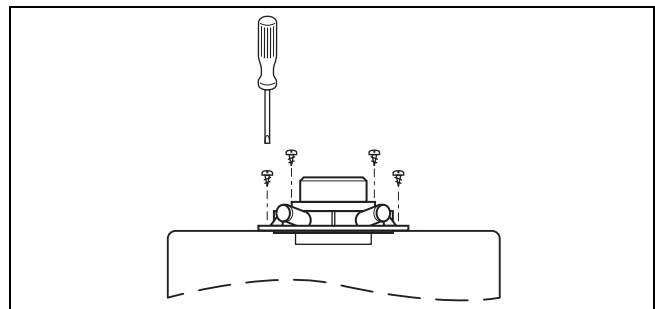
9. Alternatives 2:

Condition: Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 35)

5.2 Air/flue systems, 80/125 mm diameter

5.2.1 Installing the 80/125 mm connection piece

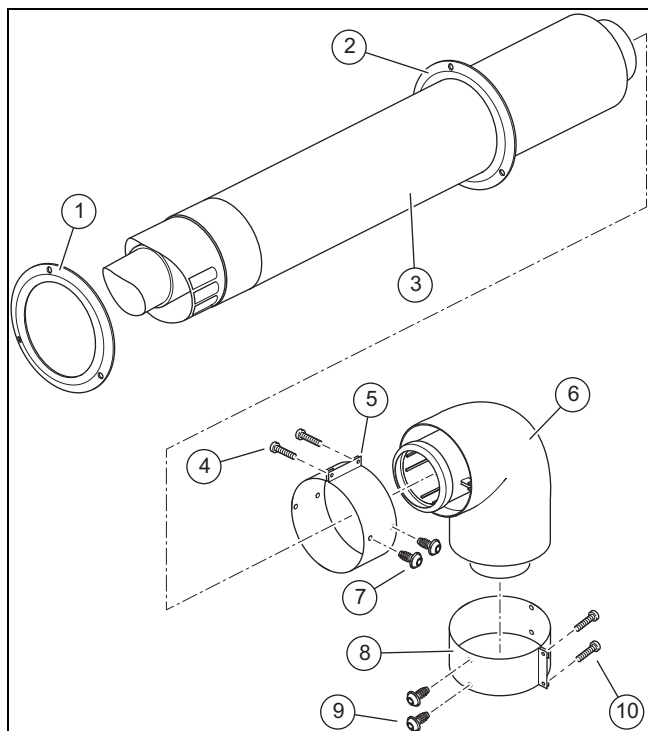


1. Fit the connection piece onto the boiler's flue gas connection. In doing so, ensure that the connection piece is aligned correctly.

- Secure the connection piece using the 4 screws.

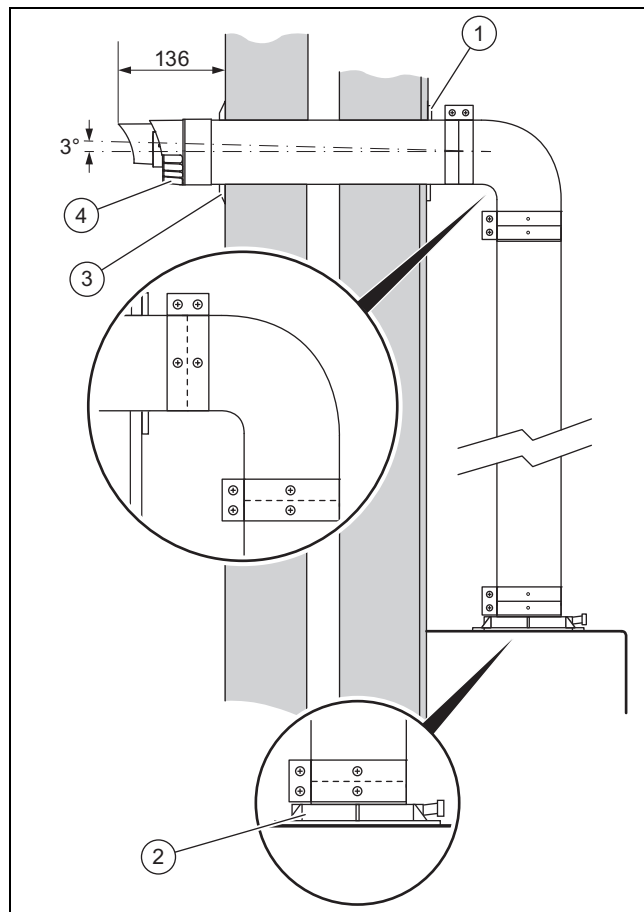
5.2.2 Installing the horizontal wall/roof duct – article number 0020257018

5.2.2.1 Scope of delivery



1	Outer wall collar	6	Connection elbow
2	Inner wall collar	7	Screws (2 x)
3	Wall duct	8	Air pipe clamp
4	Screws (2 x)	9	Screws (2 x)
5	Air pipe clamp	10	Screws (2 x)

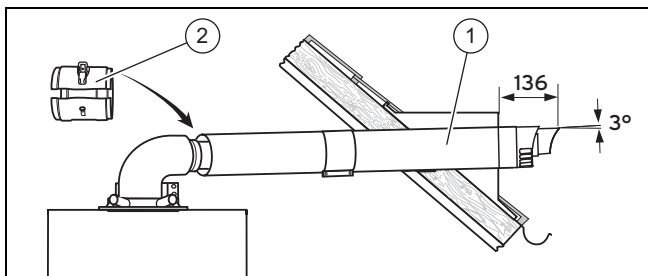
5.2.2.2 Installing the wall duct



- Slide the wall duct into the wall until the end of the wall duct protrudes slightly from the interior wall.
 - In this position, you can pull back the wall duct as far as the connection elbow.
 - After installation, the air inlet (4) must lie completely outside of the wall and the outer wall collar (3).
- Slide the inner wall collar (1) back against the wall and, if required, use a suitable sealant to seal the wall collar.
- Use the air clamp to secure the connection elbow to the connection piece (2).
- Align the elbows correctly. (→ Page 36)
- Connect all of the pipe joints with air pipe clamps. (→ Page 43)
- Check whether the rubber seal on the outer wall collar (3) is securely sealed against the wall.
- Install the boiler (→ Installation instructions for the boiler).

5.2.2.3 Installing the horizontal roof duct

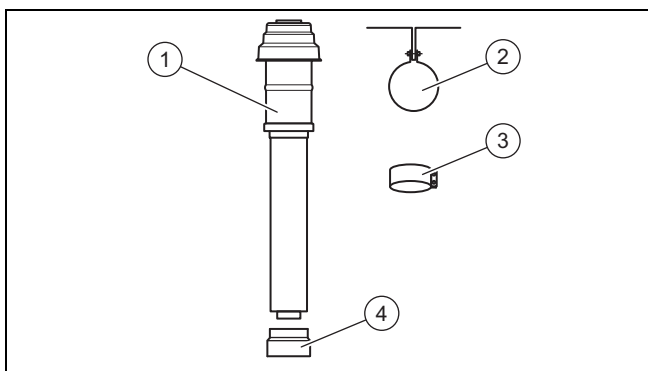
- Order the dormer from: Ubbink, Northants, Telephone +44 (0) 1280 700211.



2. Insert the roof duct (1) without external collar into the dormer.
 - Minimum dimensions of the dormer: Height x width: 300 mm x 300 mm
3. To continue with the installation, proceed in the same way as for the wall duct.
4. If required, install a sliding sleeve (2); see "Installing the sliding sleeve" (→ Page 35).

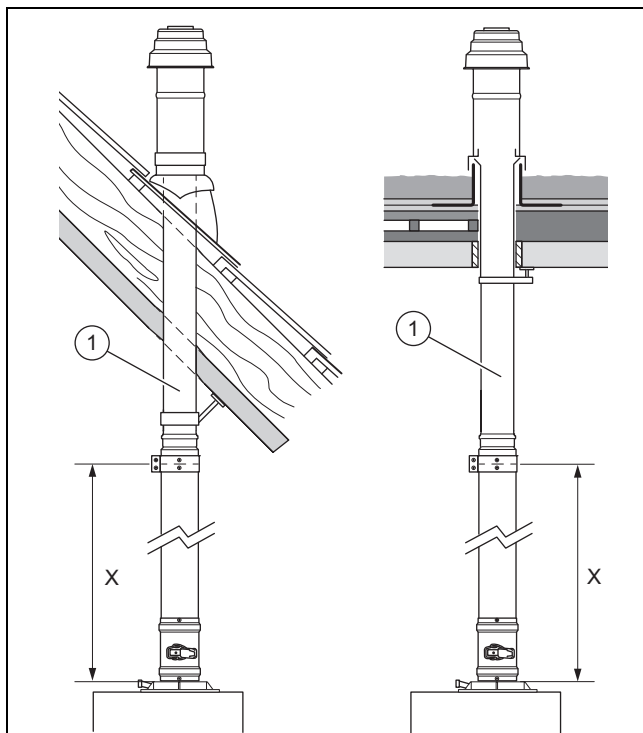
5.2.3 Installing the 80/125 mm vertical roof duct – article number 0020257016

5.2.3.1 Scope of delivery



- | | | | |
|---|----------------|---|------------------|
| 1 | Roof duct | 3 | Air clamp |
| 2 | Fixing bracket | 4 | Transition piece |

5.2.3.2 Determining the pipe lengths



- ▶ Determine the pipe length: X plus roof duct (1) (→ Installation instructions).
 - The pipe length is reduced by 0.5 m for each 45° elbow that is installed.
 - The pipe length is reduced by 1 m for each 87° elbow that is installed.
 - Required diameter of the hole for the roof duct: 150 mm

5.2.3.3 Installing the flat-roof duct

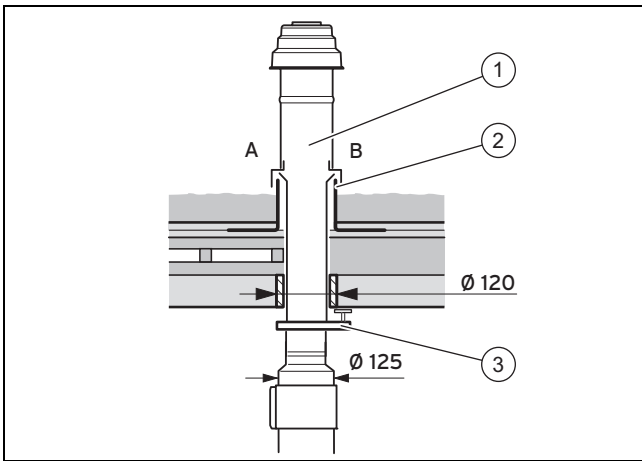


Caution.

Risk of damage to the structure of the building.

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.



A Cold roof B Warm roof

1. Determine the installation site for the roof duct.
2. Insert the flat roof penetration collar (2).
3. Glue the flat roof penetration collar in place.
4. Insert the roof duct (1) through the flat roof penetration collar from above and push it down until it is flush.
5. Align the roof duct vertically.
6. Secure the roof duct to the roof construction using the fixing bracket (3).
7. Connect the roof duct to the product using extensions, elbows and, if required, a partition.

8. **Alternatives 1:**

Condition: Roof duct with extension

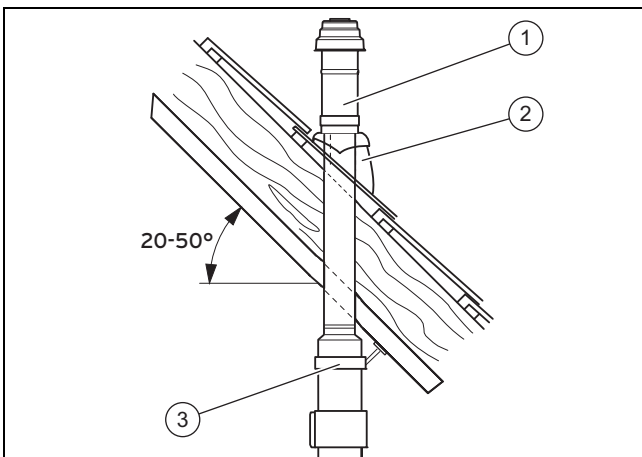
- ▶ Install the extensions. (→ Page 35)
- ▶ Install the sliding sleeve. (→ Page 35)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 43)

8. **Alternatives 2:**

Condition: Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 35)

5.2.3.4 Installing the pitched-roof duct



1. Determine the installation site of the roof duct in such a way that there is sufficient distance behind the product in order to connect the product to the heating installation.
2. Insert the pitched roof tile(2).
3. Insert the roof duct (1) through the pitched roof tile from above and push it down until it is seated firmly.
4. Align the roof duct vertically.

5. Secure the roof duct to the roof construction using the fixing bracket (3).
6. Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve.

7. **Alternatives 1:**

Condition: Roof duct with extension

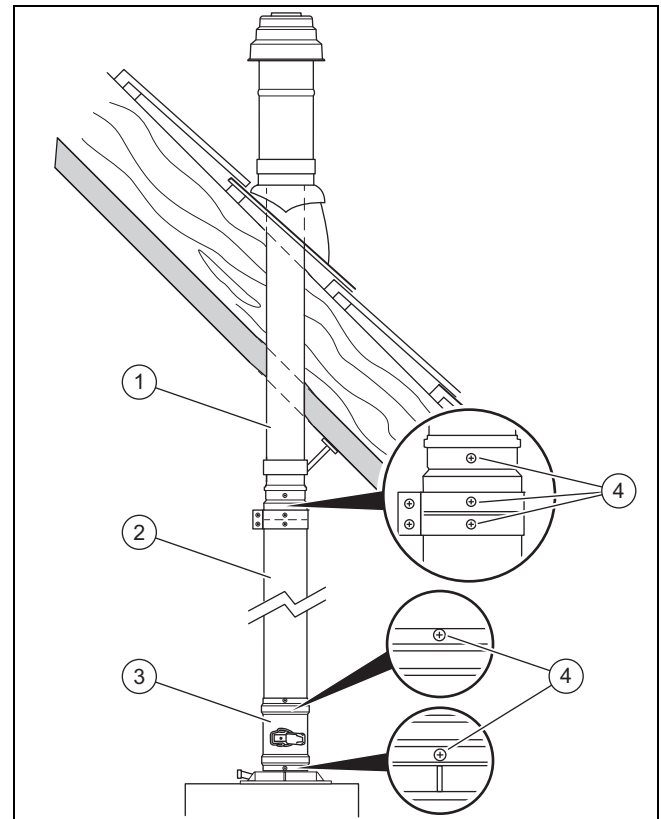
- ▶ Install the extensions. (→ Page 35)
- ▶ Install the sliding sleeve. (→ Page 35)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 43)

7. **Alternatives 2:**

Condition: Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 35)

5.2.3.5 Connecting the roof duct



- | | | | |
|---|-----------|---|----------------|
| 1 | Roof duct | 3 | Sliding sleeve |
| 2 | Extension | 4 | Locking screws |

1. Install the extensions. (→ Page 35)
2. Install the sliding sleeve. (→ Page 35)
3. Connect all of the pipe joints with air pipe clamps. (→ Page 43)

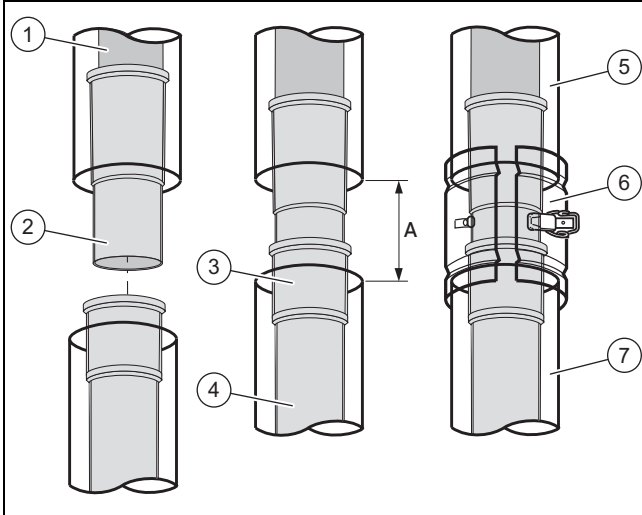
5.3 Installing the sliding sleeve, elbows and extensions

5.3.1 Installing the sliding sleeve



Note

The sliding sleeve provides for straightforward installation and disconnection of the air/flue pipe to/from the product.



1. Slide the sliding sleeve (2) onto the flue pipe (1) as far as it goes.
2. Pull the sliding sleeve (2) back far enough from the flue pipe (1) so that the inserting end of the sliding sleeve sits in the sleeve (3) of the flue pipe (4).

	60/100 mm diameter	80/125 mm diameter
A	100-110 mm	82-90 mm

3. Connect the air pipes (5, 7) with the air pipe clamp (6).
4. Use a locking screw to secure both sides. (→ Page 43)

5.3.2 Installing extensions



Danger!

Risk of poisoning due to escaping flue gas.

The flue pipes of the air/flue pipe may move as a result of thermal expansion and may then become disconnected.

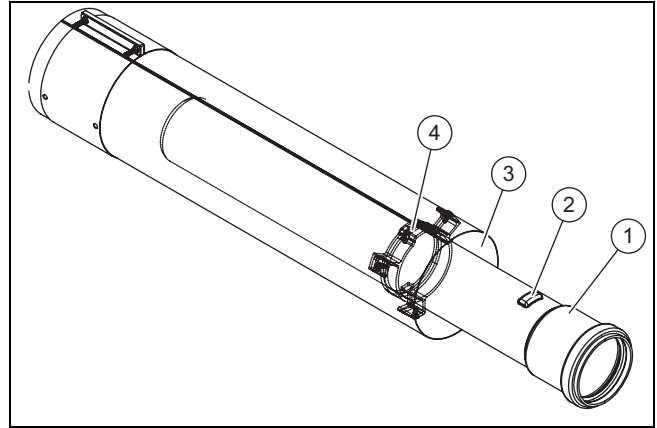
- ▶ Lock the flue pipe in the spacer of the air pipe.



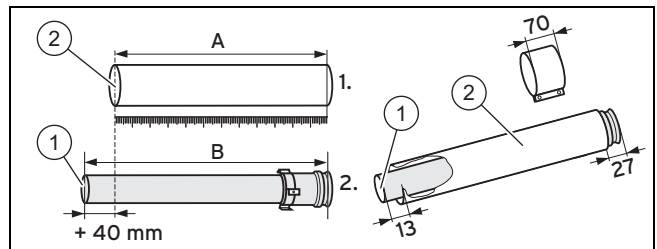
Note

To cut the air and flue pipes to length separately, you can dismantle the pre-assembled extensions without the use of any tools.

Installing 60/100 mm diameter extensions

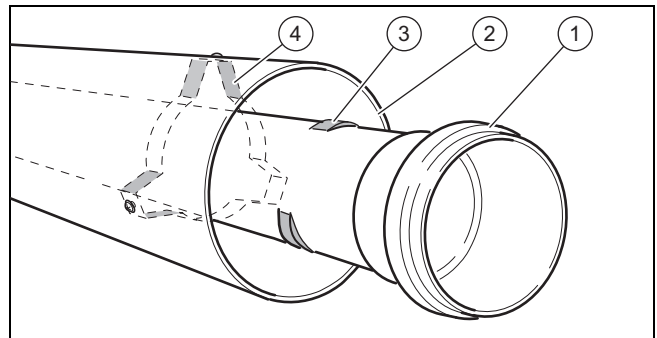


1. Turn the flue pipe (1) to a position that enables the ridge (2) on the plastic pipe to be pushed through the spacer (4).
2. Pull the pipe quickly and firmly over the detent.

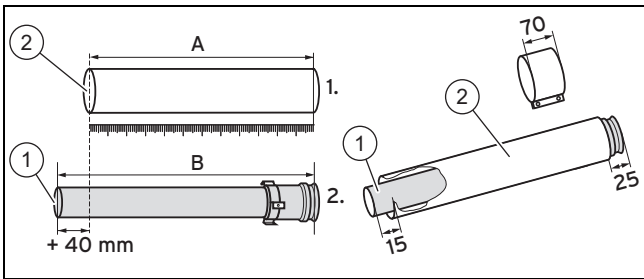


3. First, measure the required air pipe length* (A) and then calculate from that the corresponding flue gas pipe length (B) in each case:
 - Length of the flue pipe: Length of the air pipe + 40 mm
 - Minimum length of air-pipe extension: 80 mm.
4. Shorten the pipes, e.g. with a saw.
5. After shortening it, lock the flue pipe (1) inside the air pipe (2) again: Push the flue pipe back into the air pipe. Turn the flue pipe as far as it will go.

Installing 80/125 mm diameter extensions (PP)



6. Turn the flue pipe (1) to a position that enables the ledges (3) on the plastic pipe to be pushed through the spacer (4).
7. Pull the flue pipe out of the air pipe (2).



8. First, measure the required air pipe length* (**A**) and then calculate from that the corresponding flue pipe length (**B**) in each case:
 - Length of the flue pipe: Length of the air pipe + 40 mm
 - * Minimum length of air-pipe extension: 100 mm.
9. Cut the pipes with a saw, tin snips, etc.
10. After shortening, lock the flue pipe (1) inside the air pipe (2) again.

5.3.3 Installing elbows (white)

5.3.3.1 Correctly aligning the elbows

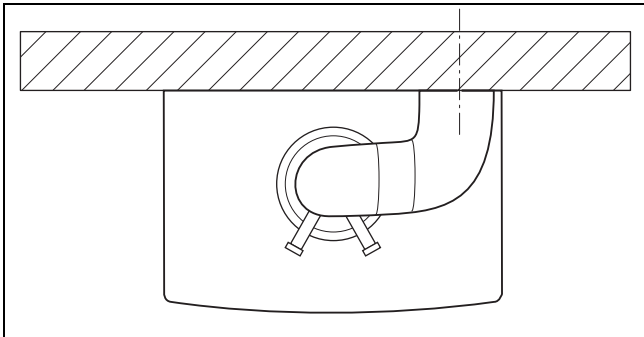


Danger!
Risk of poisoning due to escaping flue gas.

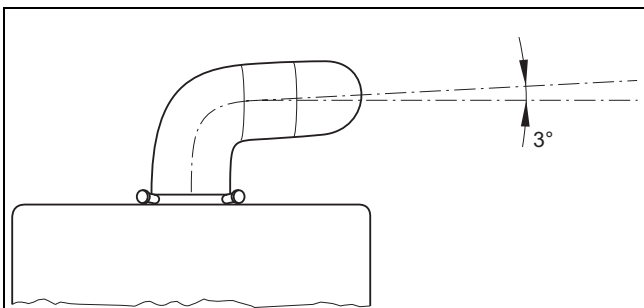
Unnecessary loads on the connections may cause leaks.

- ▶ Align the elbows correctly.

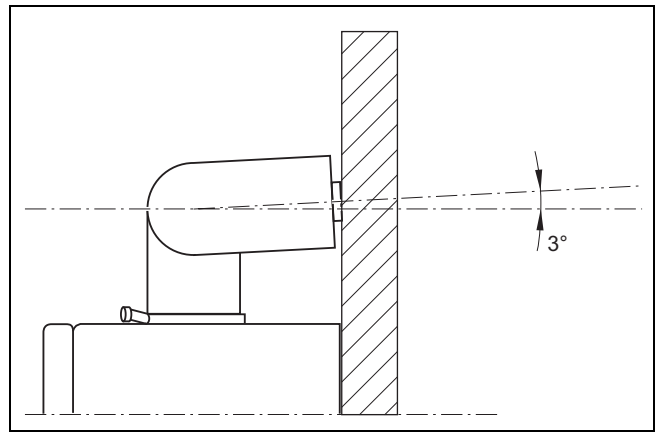
- ▶ Observe the following illustrations when using two 87° elbows.



Arrangement of the 2 x 87° elbows – View from above



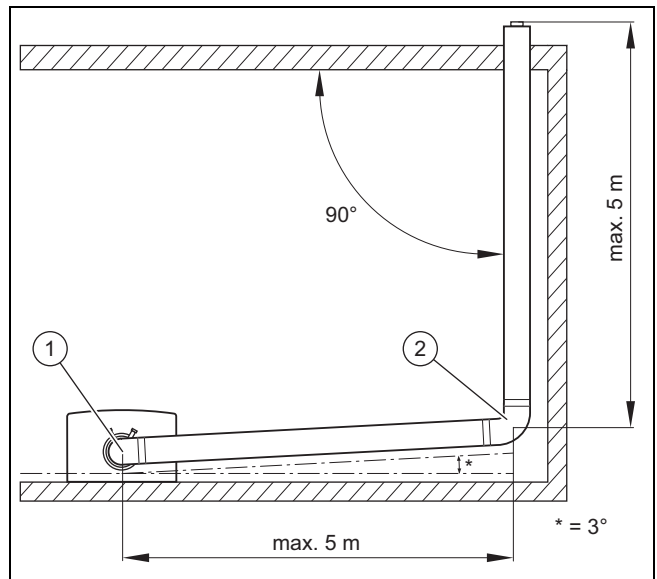
Arrangement of the 2 x 87° elbows – View from the front



Arrangement of the 2 x 87° elbows – View from the side

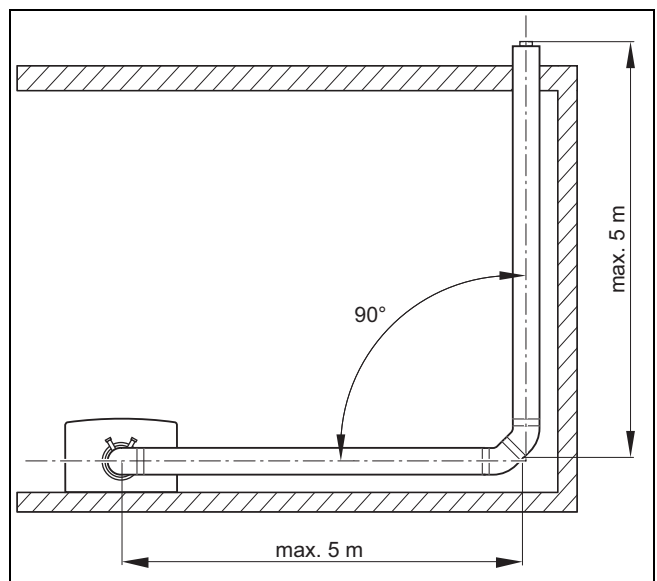
- ▶ When using elbows to route long flue pipework in a corner, observe the following figures.

Connecting extensions with 87° elbows



- ▶ To ensure that you can guide a second 87° elbow (2) at a right angle through the wall, install the elbow (1) on the top of the boiler, at a 3° rotation.

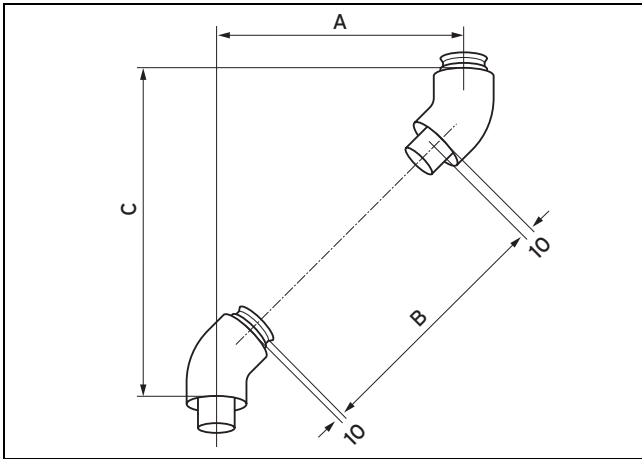
Connecting extensions with 45° elbows



- ▶ Install an 87° elbow at an angle of 3° between the wall and the air/flue pipework or use two 45° elbows.

- ▶ Connect all of the pipe joints with air pipe clamps.
(→ Page 43)

5.3.3.2 Installing the 45° elbow, 60/100 mm diameter



A Offset

C Height

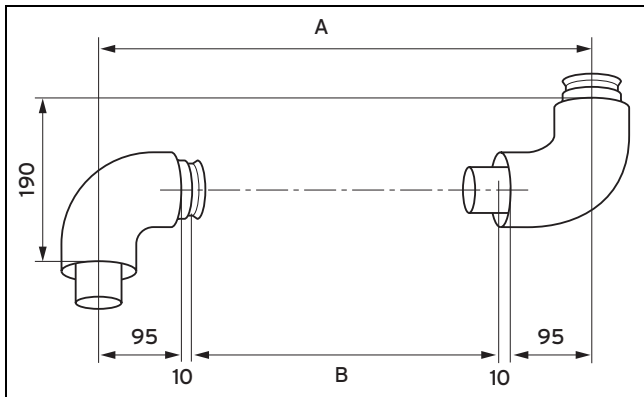
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 300 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 284 mm and the height (**C**) = 420 mm.
 - ◁ From that, the corresponding flue pipe length is calculated as $284 + 40 = 324$ mm.

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
90	0	210	325	320	445	525	602	645
95	0	215	330	327	450	530	610	650
100	0	220	335	334	455	535	617	655
> 105 to < 155	not possible	not possible	340	341	460	540	624	660
			345	348	465	545	631	665
			350	355	470	550	638	670
			355	362	475	555	645	675
160	86	280	360	369	480	560	652	680
165	93	285	365	376	485	565	659	685
170	100	290	370	383	490	570	666	690
175	107	295	375	390	495	575	673	695
180	115	300	380	397	500	580	680	700
185	122	305	385	404	505	585	687	705
190	129	310	390	412	510	590	694	710
195	136	315	395	419	515	595	701	715
200	143	320	400	426	520	600	709	720
205	150	325	405	433	525	605	716	725
210	157	330	410	440	530	610	723	730
215	164	335	415	447	535	615	730	735
220	171	340	420	454	540	620	737	740
225	178	345	425	461	545	625	744	745
230	185	350	430	468	550	630	751	750
235	192	355	435	475	555	635	758	755
240	199	360	440	482	560	640	765	760
245	206	365	445	489	565	645	772	765
250	214	370	450	496	570	650	779	770
255	221	375	455	503	575	655	786	775
260	228	380	460	511	580	660	793	780
265	235	385	465	519	585	665	800	785
270	242	390	470	525	590	670	808	790
275	249	395	475	532	595	675	815	795

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
280	256	400	480	539	600	680	822	800
285	263	405	485	546	605			
290	270	410	490	553	610			
295	277	415	495	560	615			
300	284	420	500	567	620			
305	291	425	505	574	625			
310	298	430	510	581	630			
315	306	435	515	588	635			
320	313	440	520	595	640			

5.3.3.3 Installing the 87° elbow, 60/100 mm diameter



A Offset

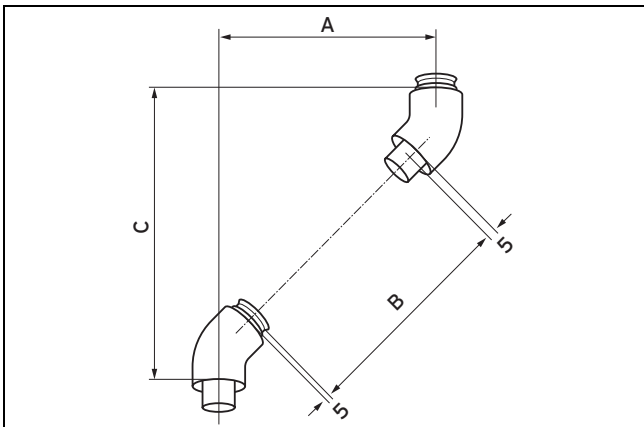
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 400 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 190 mm.
 - ◀ From that, the corresponding flue pipe length is calculated as $190 + 40 = 230$ mm

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
> 190 to < 210	0	470	260	690	480
		475	265	695	485
		480	270	700	490
> 215 to < 265	not possible	485	275	705	495
		490	280	710	500
		495	285	715	505
> 270 to < 290	80	500	290	720	510
		505	295	725	515
		510	300	730	520
295	85	515	305	735	525
300	90	520	310	740	530
305	95	525	315	745	535
310	100	530	320	750	540
315	105	535	325	755	545
320	110	540	330	760	550
325	115	545	335	765	555
330	120	550	340	770	560
335	125	555	345	775	565
340	130	560	350	780	570
345	135	565	355	785	575
350	140	570	360	790	580

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
355	145	575	365	795	585
360	150	580	370	800	590
365	155	585	375		
370	160	590	380		
375	165	595	385		
380	170	600	390		
385	175	605	395		
390	180	610	400		
395	185	615	405		
400	190	620	410		
405	195	625	415		
410	200	630	420		
415	205	635	425		
420	210	640	430		
425	215	645	435		
430	220	650	440		
435	225	655	445		
440	230	660	450		
445	235	665	455		
450	240	670	460		
455	245	675	465		
460	250	680	470		
465	255	685	475		

5.3.3.4 Installing the 45° elbow, 80/125 mm diameter



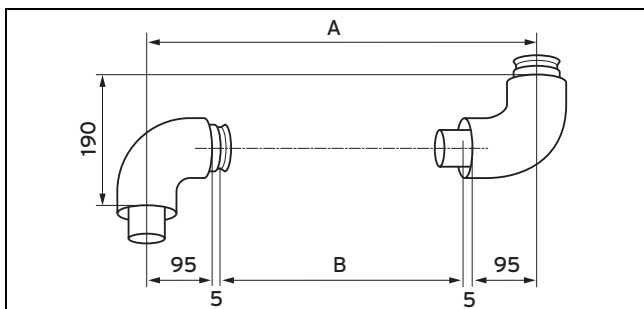
- A Offset
 B Length of the air pipe
 C Height

- ▶ Measure the offset (**A**), e.g. with 300 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 294 mm and the height (**C**) = 420 mm.
 - ◁ From that, the corresponding flue pipe length is calculated as $294 + 40 = 334$ mm.

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
85	-10	205	330	337	450	535	627	655
90	-3	210	335	344	455	540	634	660
95	4	215	340	351	460	545	641	665
100	11	220	345	358	465	550	648	670
> 100 to < 170	not possible	not possible	350	365	470	555	655	675
			355	372	475	560	662	680

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
> 100 to < 170	not possible	not possible	360	379	480	565	669	685
			365	386	485	570	676	690
165	103	285	370	393	490	575	683	695
170	110	290	375	400	495	580	690	700
175	117	295	380	407	500	585	697	705
180	125	300	385	414	505	590	704	710
185	132	305	390	422	510	595	711	715
190	139	310	395	429	515	600	719	720
195	146	315	400	436	520	605	726	725
200	153	320	405	443	525	610	733	730
205	160	325	410	450	530	615	740	735
210	167	330	415	457	535	620	747	740
215	174	335	420	464	540	625	754	745
220	181	340	425	471	545	630	761	750
225	188	345	430	478	550	635	768	755
230	195	350	435	485	555	640	775	760
235	202	355	440	492	560	645	782	765
240	209	360	445	499	565	650	789	770
245	216	365	450	506	570	655	796	775
250	224	370	455	513	575	660	803	780
255	231	375	460	520	580	665	810	785
260	238	380	465	528	585	670	818	790
265	245	385	470	535	590	675	825	795
270	252	390	475	542	595	680	832	800
275	259	395	480	549	600	685	839	805
280	266	400	485	556	605	690	846	810
285	273	405	490	563	610	695	853	815
290	280	410	495	570	615	700	860	820
295	287	415	500	577	620	705	867	825
300	294	420	505	584	625	710	874	830
305	301	425	510	591	630	715	881	835
310	308	430	515	598	635	720	888	840
315	315	435	520	605	640	725	895	845
320	323	440	525	612	645	730	902	850
325	330	445	530	620	650	-	-	-

5.3.3.5 Installing the 87° elbow, 80/125 mm diameter



A Offset

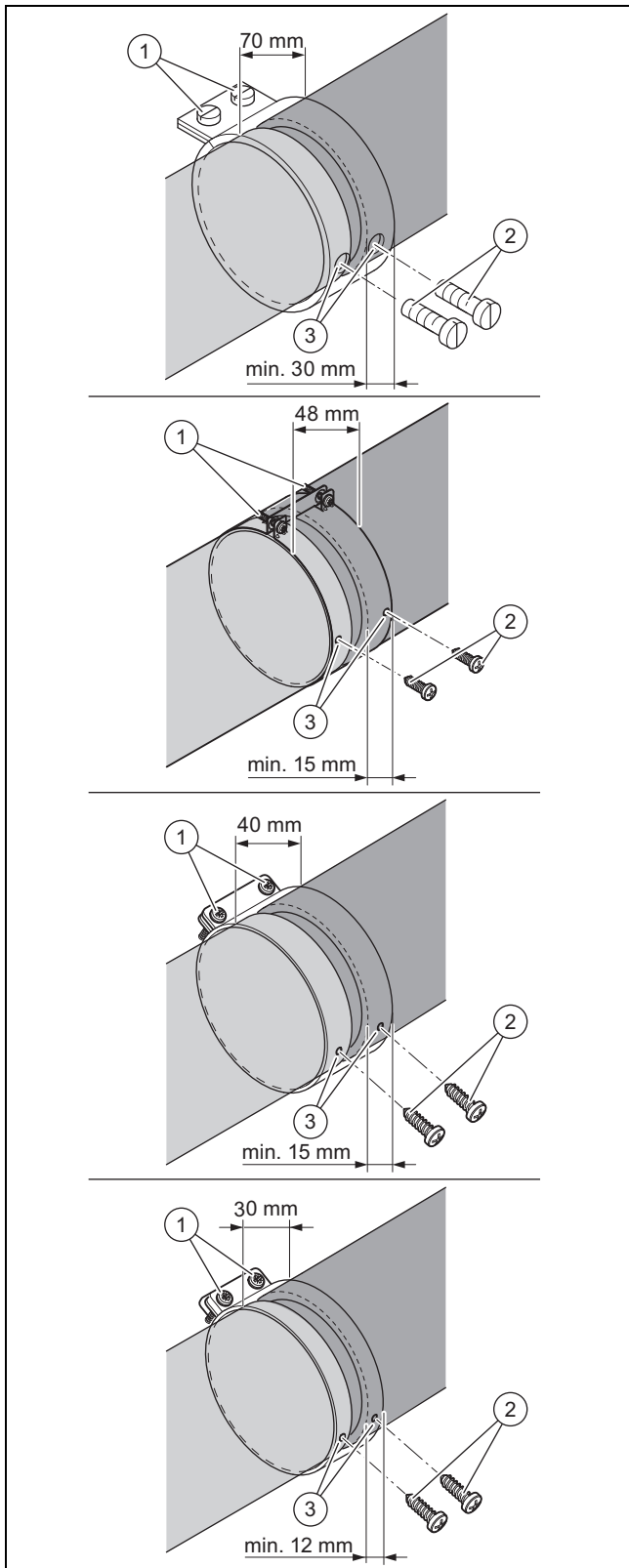
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 400 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 200 mm.
 - ◀ From that, the corresponding flue pipe length is calculated as $200 + 40 = 240$ mm

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
190	0	500	300	735	535
195	0	505	305	740	540
200	0	510	310	745	545
> 200 to < 300	not possible	515	315	750	550
		520	320	755	555
		525	325	760	560
		530	330	765	565
300	100	535	335	770	570
305	105	540	340	775	575
310	110	545	345	780	580
315	115	550	350	785	585
320	120	555	355	790	590
325	125	560	360	795	595
330	130	565	365	800	600
335	135	570	370	805	605
340	140	575	375	810	610
345	145	580	380	815	605
350	150	585	385	820	620
355	155	590	390	825	625
360	160	595	395	830	630
365	165	600	400	835	635
370	170	605	405	840	640
375	175	610	410	845	645
380	180	615	415	850	650
385	185	620	420	855	655
390	190	625	425	860	660
395	195	630	430	865	665
400	200	635	435	870	670
405	205	640	440	875	675
410	210	645	445	880	680
415	215	650	450	885	685
420	220	655	455	890	690
425	225	660	460	895	695
430	230	665	465	900	700
435	235	670	470	905	705
440	240	675	475	910	710
445	245	680	480	915	715
450	250	685	485	920	720
455	255	690	490	925	725
460	260	695	495	930	730
465	265	700	500	935	735
470	270	705	505	940	740
475	275	710	510	945	745
480	280	715	515	950	750
485	285	720	520	955	755
490	290	725	525	960	760
495	295	730	530	-	-

5.3.4 Installing the air pipe clamps

1. Connect all of the pipe joints with air pipe clamps:



2. Slide the air pipe clamps centrally over the pipe joint for the air pipes and tighten the screws (1).
 - Air pipes distance: ≤ 5 mm



Danger!

Risk of poisoning due to escaping flue gas.

Flue gas can escape if the flue pipe is damaged.

- Take care that the flue pipe is not damaged when drilling.

3. Drill holes into the air pipe through the holes in the air pipe clamp (3).



Danger!

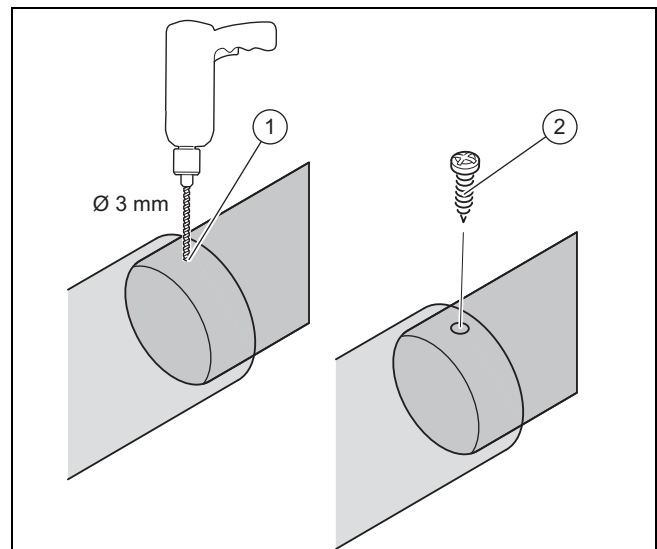
Risk of poisoning due to escaping flue gas.

Flue gases may escape as a result of pipes that are not securely connected to each other.

- Secure the clamps and air pipes using the supplied bolts.

4. Insert the locking screws (2).

5.3.5 Securing the telescopic extension



Danger!

Risk of poisoning due to escaping flue gas.

Flue gas can escape if the flue pipe is damaged.

- Take care that the flue pipe is not damaged when drilling.

1. Drill a hole (1) into the overlapping air pipes.
 - Diameter: 3 mm
2. Use the screw (2) to screw in the air pipes.

Index

A	
Adjusting the deflector	18
Assembling the vertical roof duct, 60/100 mm diameter	30
B	
Balcony	29
Black terminal	16
C	
CE certification	5
Change of colour	16–17
Channel vent, minimum clearances	4
Clearance from the external wall	11
Competent person	3
Correctly aligning the elbows	36
D	
Deflector set	17
Determining the pipe length of the direct, telescopic 60/100 mm diameter wall duct	14–15
Disposing of condensate	8
Documents	6
E	
Eaves	24, 28
End pipe	16, 23, 28
Extensions	22, 27
F	
Flue gas route	3
G	
Grease	3
H	
Horizontal roof duct, installing	14
Horizontal wall duct	24
Horizontal wall duct, installing	13
Horizontal wall/roof duct, preparing the installation	10
I	
Ice formation	4
Installing extensions	35
Installing the 60/100 mm diameter flat-roof duct	31
Installing the 60/100 mm diameter pitched-roof duct	31
Installing the 80/125 mm diameter flat-roof duct	33
Installing the 80/125 mm diameter pitched-roof duct	34
Installing the air pipe clamps	43
Installing the sliding sleeve	35
Intended use	3
L	
Lightning	4
M	
M8 threaded rods	24, 28
O	
Opening	3
Opening piece	16
Q	
Qualification	3
R	
Regulations	5
S	
Seal	3
Securing the telescopic extension	43
Securing the telescopic pipe	15
Shortening the 60/100 mm wall duct	25
Shortening the air/flue pipe	12
T	
Terminal	
Black	16

V

Variable terminal set	22
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Supplier

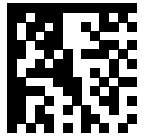
Vaillant Group UK LTD

Nottingham Road ■ Belper-Derbyshire ■ DE56 1JQ

Telephone 01773 824639 ■ Technical helpline 0330 100 7679

After sales service 0330 100 3142

www.glow-worm.co.uk



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